

Service Manual

**ORDER NO.
CRT1644**
HIGH POWER CD PLAYER WITH FM/MW/LW TUNER

DEH-415 DEH-415SDK

**EW,X1B/EW
GR**

- This additional service manual is designed to be used together with Model DEH-405/EW,DEH-405/X1B/EW and DEH-405SDK/GR Service Manual CRT1563. Refer to it for finding parts numbers and adjustment ,etc. which are not shown in this manual.

EXPLODED VIEW PARTS LIST

- Parts List (Page 1-38)

Mark No.	Description	DEH-405/EW	DEH-415/EW	DEH-415/X1B/EW
		Part No.	Part No.	Parts No.
45	Detach Grille Assy	CXA5867	CXA7665	CXA7665
51	Button	CAC3742	CAC4312	CAC4312
54	Grille	CNS2837	CNS3438	CNS3438

Mark No.	Description	DEH-405SDK/GR	DEH-415SDK/GR
		Part No.	Part No.
21	Chassis Unit	CXA5935	CXA6983
45	Detach Grille Assy	CXA5865	CXA7667
51	Button	CAC3742	CAC4312
54	Grille	CNS2835	CNS3437

PACKING METHOD**● Parts List (Page 2-2)***** :Non spare part**

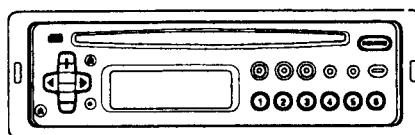
Mark	No.	Description	DEH-405/EW	DEH-415/EW	DEH-415/X1B/EW
			Part No.	Part No.	Parts No.
	1-1	Owner's Manual	CRD1720	CRD1839	URD1839
	1-3	Installation Manual	CRD1719	CRD1838	URD1838
	2	Carton	CHG2419	CHG2608	UHG2608
	5	Protector	CHP1603	CHP1603	UHP-009
	6	Protector	CHP1602	CHP1602	
	7	Cover	CEG1092	CEG1092	.....
*	9	Contain Box	CHL2419	CHL2608	UHD-002
*		Warranty Card	CRY1071	CRY1071	.....
*		Polyethylene Bag	.....	.....	UEG-002
*		Card	.....	.....	URY-001

Mark	No.	Description	DEH-405SDK/GR	DEH-415SDK/GR
			Part No.	Part No.
	1-1	Owner's Manual	CRD1723	CRD1843
	1-3	Installation Manual	CRD1719	CRD1838
	2	Carton	CHG2420	CHG2609
	9	Contain Box	CHL2420	CHL2609



Service Manual

● DEH-605RDS



ORDER NO.
CRT1563

The chapter 1 of this Service Manual will not be reprinted. On your additional orders, we may supply only the chapter 2. For the chapter 1, please make copies and attach to the chapter 2 at your side if necessary.

HIGH POWER CD PLAYER WITH RDS TUNER

DEH-605RDS

EW,X1B/EW

HIGH POWER CD PLAYER WITH FM/MW/LW TUNER

DEH-505SDK

GR

DEH-505

EW,X1B/EW

DEH-405SDK

GR

DEH-405

EW,X1B/EW

- See the service manual CX-540(CRT1574) for the CD mechanism description, disassembly and circuit description.
- The CD mechanism employed in this model is one of CX-540 series.

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CHAPTER 1

● CD Player Service Precautions

1. For pickup unit(CGY1031) handling, please refer to "Disassembly"(CX-540 Service Manual CRT1574). During replacement, handling precautions shall be taken to prevent an electrostatic discharge(protection by a short pin).
2. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.

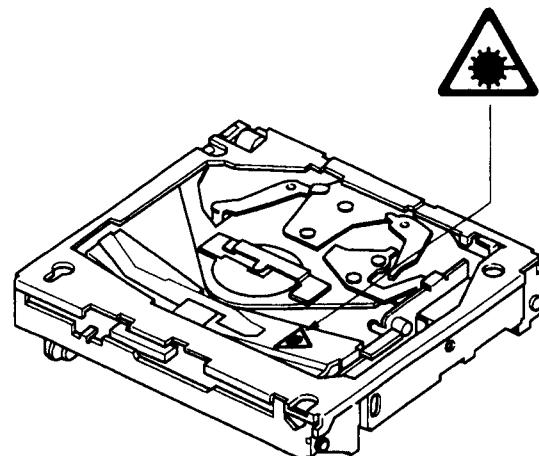
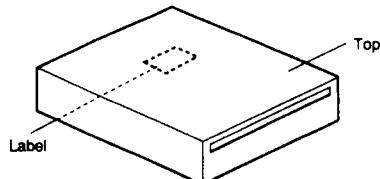
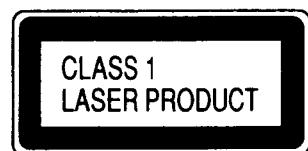
SAFETY INFORMATION

1. Safety Precautions for those who Service this Unit.

- Follow the adjustment steps (see pages 1-26 through 1-32) in the service manual when servicing this unit. When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.

Caution:

1. During repair or tests, minimum distance of 13cm from the focus lens must be kept.
2. During repair or tests, do not view laser beam for 10 seconds or longer.
2. A "CLASS 1 LASER PRODUCT" label is affixed to the rear of the player.
3. The triangular label is attached to the mechanism unit frame.



4. Specifications of Laser Diode

Specifications of laser radiation fields to which human access is possible during service.

Wavelength = 785 nanometers

Radiant power = 69.7 microwatts(Through a circular aperture stop having a diameter of 80 millimeters)
0.55 microwatts(Through a circular aperture stop having a diameter of 7 millimeters)

1. SPECIFICATIONS

General

Power source 14.4 V DC (10.8 — 15.6 V allowable)
 Grounding system Negative type
 Max. current consumption 6 A
 Dimensions (chassis) 178 (W) × 50 (H) × 150 (D) mm
 (front face) 188 (W) × 58 (H) × 20 (D) mm
 Weight 1.5 kg

Amplifier

Max. power output 22 W × 4 (EIAJ)
 Continuous power output 14 W × 4 (DIN 45324, +B=14.4 V)
 Load impedance 4Ω (4 — 8Ω allowable)
 Preout output level/
 output impedance 500 mV/1 kΩ
 Tone controls (bass) ±10 dB (100 Hz)
 (treble) ±10 dB (10 kHz)
 Loudness contour +10 dB (100 Hz), +7 dB (10 kHz)
 (volume: -30 dB)

CD player

System Compact disc audio system
 Usable discs Compact disc
 Signal format Sampling frequency: 44.1 kHz
 Number of quantization bits: 16; linear
 Frequency characteristics 5 — 20,000 Hz (±1 dB)
 Signal-to-noise ratio 94 dB (1 kHz) (IEC-A network)
 Dynamic range 90 dB (1 kHz)
 Number of channels 2 (stereo)

FM tuner

Frequency range 87.5 — 108 MHz
 Usable sensitivity 11 dBf (1.0μV/75Ω, mono, S/N: 30 dB)
 50 dB quieting sensitivity 16 dBf (1.7μV/75Ω, mono)
 Signal-to-noise ratio 70 dB (IEC-A network)
 Distortion 0.3% (at 65 dBf, 1 kHz, stereo)
 Frequency response 30 — 15,000 Hz (±3 dB)
 Stereo separation 40 dB (at 65 dBf, 1 kHz)

MW tuner

Frequency range 531 — 1,602 kHz
 Usable sensitivity 18μV (25 dB) (S/N: 20 dB)
 Selectivity 50 dB (±9 kHz)

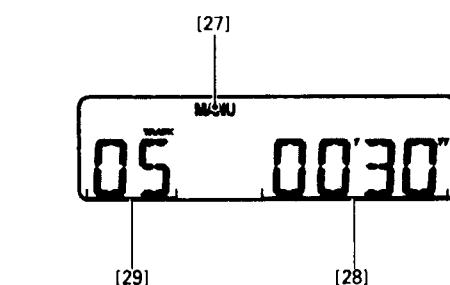
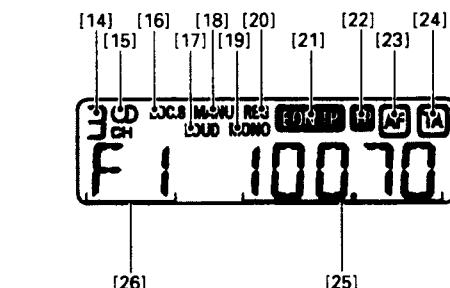
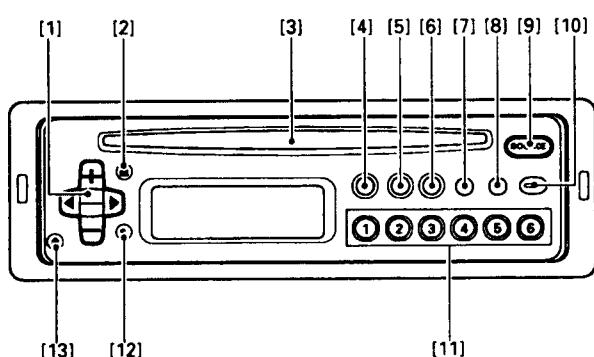
LW tuner

Frequency range 153 — 281 kHz
 Usable sensitivity 30μV (30 dB) (S/N: 20 dB)
 Selectivity 50 dB (±9 kHz)

Note:

Specifications and the design are subject to possible modification
 without notice due to improvements.

2. OPERATION AND CONNECTION



Changing the Source

Parts Identification

[9] Source

Changing the Source

Each time the button [9] is pressed, the source will change in the following sequence:

Built-in CD player → Tuner → OFF

- If there is no disc in the built-in CD player, the source will not change to "built-in CD player".

Adjusting the Audio

Parts Identification

[1] Volume/Audio adjustment

[12] Shift

[17] Loudness

Mode Selection

Each press of button [12] changes the mode as follows:

Volume adjustment (VOL) → Balance adjustment (FAD/BAL) → Tone adjustment (BAS/TRE) → Loudness adjustment (LOUD)

- When you're adjusting fader, balance, bass or treble, the indicator will stop at the center setting. About 8 seconds after adjustment, the display returns to its previous state.

Volume Adjustment

Pressing the (+) side of button [1] increases the volume, while the (-) side decreases it. (Display shows "VOL 00" ~ "VOL 30".)

- When driving your vehicle, be sure to keep the volume of the unit set low enough to allow you to hear sounds coming from outside.

Balance Adjustment

Press button [12] to select balance adjustment mode. ("FAD" appears on the display.) Adjust the fader using the (+) or (-) side of button [1]. To adjust the balance, press either the (◀) or (▶) side of button [1] to turn on BAL.

Fader

Press the (+) side of button [1] to raise the volume of the front speaker only. Press the (-) side of the button to raise the volume of the rear speaker only.

(Display shows "FAD F9" ~ "FAD R9".)

- Please set "FAD 0" when using 2 speaker system.

Balance

Pressing the (◀) side of button [1] shifts the balance to the left speaker, while the (▶) side shifts it to the right speaker.

(Display shows "BAL L9" ~ "BAL R9".)

Tone Adjustment

Press button [12] to select tone adjustment mode. ("BAS" appears.) Select the tone you wish to adjust using the (◀) or (▶) side of button [1]. Each press of the (▶) side changes the tone from BAS → TRE, while each press of the (◀) side changes the tone from TRE → BAS.

Bass Adjustment

Select the Bass mode.

Pressing the (+) side of button [1] increases bass, while the (-) side decreases bass. (Display shows "BAS -6" ~ "BAS +6".)

Treble Adjustment

Select Treble adjustment mode.

Pressing the (+) side of button [1] increases treble, while the (-) side decreases treble. (Display shows "TRE -6" ~ "TRE +6".)

Loudness Adjustment

This "loudness" function enhances both the high and low ranges of sound to give even more power to output even at low volume.

Press button [12] to select loudness adjustment mode. (The "LOUD" indicator appears on the display.)

Pressing the (▶) side of button [1] turns the loudness function on (LOUD [17] light up), pressing the (◀) side turns it off.

Using the Tuner

Parts Identification

- [1] Tuning
- Seek/Manual
- Local Seek Sensitivity
- [4] Local mode
- [5] BSM/Preset Scan
- [6] FM Monaural
- [7] AF/REG
- [8] TA/EON
- [9] Source
- [10] Band
- [11] Preset
- [14] Preset Number
- [15] FM Stereo
- [16] Local mode
- [18] Manual
- [19] FM Monaural
- [20] REG
- [21] EON
- [22] TP
- [23] AF
- [24] TA
- [25] Frequency
- [26] Band

Electronic Tuner

Frequency allocation differs depending upon the area. This unit has been designed in accordance with the frequency allocations for Western Europe, Asia, the Middle and Near East, Africa, Australia and Oceania. Use in other areas may result in improper reception of AM. The RDS function does not work in regions with no RDS broadcast services.

Listening to the Radio

1. Set the source to "tuner" by pressing button [9].
 - For details, refer to "Changing the Source" on page 1-4.
2. Select the band by pressing button [10]. Each time the button is pressed, the band will change in the following sequence: FM1 → FM2 → FM3 → MW/LW
 - MW and LW are combined in one band.
3. Use seek tuning or manual tuning to tune to a radio station.
 - 3-1. Set the tuning mode to "seek" or "manual" by pressing the (◀) and (▶) sides of button [1] simultaneously. Repeat this operation to switch to the other tuning mode. (When the manual tuning mode is set, "MANU" [18] will be displayed.)

- 3-2. Tune by Press (◀) or (▶) of button [1]. (When there is a stereo broadcast, "○" [15] will be displayed.)

Seek Tuning:

When the button is pressed, stations whose signal strength is above a certain level will be tuned automatically.

Manual Tuning:

When the button is pressed, the frequency will change by one step up or down.

Using the Preset Memory

- The radio stations can be stored in memory under buttons 1 to 6 of [11].
1. Tune in to the station to be stored in memory.
 2. Store the station in memory by pressing one of the buttons (1 to 6) for at least 2 seconds. When the [14] number stops blinking, the station will be stored in memory under the button pressed.
 - Up to 18 FM stations and 6 MW/LW stations can be stored in memory.

Preset Tuning

The radio stations stored in memory can be recalled by pressing the respective button 1 to 6 of [11]. The station stored under that button will be recalled. (The number of the button pressed will be displayed at [14].)

Using the Best Stations Memory (BSM)

- The radio stations having a strong signal can be tuned automatically and stored in memory under buttons 1 to 6 [11]. Press button [5] for at least 2 seconds. (The "BSM" will blink.) After "BSM" stops blinking, the stations will be stored in memory under buttons 1 to 6 of [11].
- BSM can be canceled mid-operation by pressing button [5].
 - The stations will be stored under buttons 1 to 6 in the order of their signal strength. The strongest station will be stored under button 1, followed by stations with lower signal strengths.
 - If there are fewer than 6 stations whose signal is strong, there will be spare memory.
 - It will take almost 30 seconds for BSM to be completed.

Preset Scan Tuning

This recalls in sequence all the stations stored in memory under the buttons [11] for 8 seconds each. Press button [5]. (The [14] number will blink.) To cancel, press the button again. After the desired station is tuned, cancel the preset scan tuning. The station will then continue to be received.

- Stations stored in memory under the buttons [11] but whose signal is weak will not be recalled.

Local Seek Tuning

When the local mode is set, the seek tuning's sensitivity level will become high and only stations with a strong signal will be seek tuned. The local mode's seek sensitivity can be adjusted.

Setting the Local Mode

Press button [4]. (The "LOC.S" [16] will light.) To cancel the local mode, press the button again.

Adjusting the Local Seek Sensitivity

There are 4 local seek sensitivity steps for FM and 2 steps for MW/LW.

- LOC-4 is the highest seek tuning sensitivity level. Only the stations with a strong signal are tuned. LOC-3, LOC-2, and LOC-1 in descending order enables the tuning of stations with a respectively weaker signal.
- 1. Set to local seek sensitivity adjustment mode. Press button [4] for at least 2 seconds. (The current sensitivity level "LOC-2" will be displayed.)
- The local seek sensitivity adjustment mode will be canceled after about 5 seconds.
- 2. Adjust the sensitivity level by pressing (◀) or (▶) of button [1].

FM Monaural Reception

If a stereo broadcast has a lot of noise, switching to the monaural reception mode will reduce the noise. Press button [6]. ("MONO" [19] will appear on the display.) To cancel, press the button again.

Playing Compact Discs**Parts Identification**

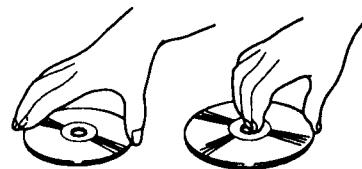
- [1] Track Number Search
Fast Forward and Reverse
- [2] Eject
- [3] Disc Insertion Slot
- [9] Source
- [11] ① Pause
② Repeat
③ Random play
- [27] Manual
- [28] Playback time
- [29] Track number

Discs

- Only use compact discs (optical digital audio discs) bearing the mark shown below.

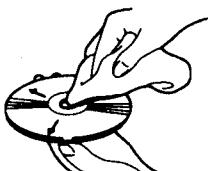


- Do not use cracked, scratched, or warped discs.
- Do not touch the disc's playing side. Handle the disc as shown below.



- Do not affix any label on the disc.
- Do not apply any vinyl record spray, anti-static agent, benzene, paint thinner, or any other volatile chemicals.

- Do not play a dirty disc. Use a soft cloth to clean a dirty disc as shown below. Wipe the disc outward from the center.



- Do not place the disc in high temperatures and direct sunlight.
- Be sure to store the disc in its case.

CD Playing Environment

- Disc playback may be interrupted by sudden road shock.
- When the air temperature is low and the car heater is turned on, condensation on the disc and internal parts of the unit may prevent proper playback operation. If this happens, turn off the unit and wait one hour until the condensation is gone. Also, use a soft cloth to wipe off any condensation from the disc.

Listening to the CD Player

1. With the label side up, insert a disc into [3]. Playback will start. (The track number [29] and playback time [28] will be displayed.)

- Do not insert the disc with the label side down. Doing so may scratch the disc.
- If the disc stops midway while it is being inserted or if there is no playback after a disc is inserted, something may be wrong with the disc. Eject the disc and check it.

2. Turn ON/OFF the disc playback. Press button [9] to change the source.
• For details, refer to "Changing the Source".

3. Eject the disc by pressing button [2].

- Do not leave the disc halfway into the unit as shown below. Doing so may cause the disc to be bent or dropped.



Using Track Number Search, Fast Forward and Reverse

1. Set the mode to "track number search" or "fast forward and reverse". Press the (\blacktriangleleft) and (\triangleright) sides of button [1] simultaneously. Each time this is repeated, the mode will switch between the track number search mode and fast forward and reverse mode. (When the fast forward and reverse mode is set, "MANU" [27] will light.)
2. Execute a track number search or fast forward and reverse by pressing (\blacktriangleleft) and (\triangleright) of button [1].
- Playback sound can be heard during fast forward and reverse.

Pausing

The disc playback can be stopped temporarily by pressing ① of button [11]. (The "PAUSE" will be displayed.) To cancel the pause, press the button again.

Repeat

1. To repeat the music you are listening to, press button ② of [11] ("RPT" will appear on the display).
2. To cancel music repeat, press button ② of [11] to turn off "RPT".

Random Play

1. To play music randomly, press button ③ of [11] ("RDM" will appear on the display). Once the current track has been played, the microprocessor will randomly select the next and subsequent tracks.
2. To cancel random play, press button ③ of [11] to turn off "RDM".
- Since selections are played in random order, the same selection may be played twice in succession.

Error Display

If there is a problem with CD playback, an error code will be displayed.
(Ex.: "ERROR-10")

If an error is displayed, refer to the table below to identify the problem. If the error is displayed even after corrective action is taken, contact your dealer or the nearest authorized PIONEER Service Station.

D: Display

C: Cause

T: Treatment

D: ERROR-11, 12, 14, 17, 30

C: The disc is dirty.

T: Clean the disc.

D: ERROR-11, 12, 17, 30

C: The disc is scratched.

T: Replace the disc.

D: ERROR-11, 14, 17

C: The disc is inserted with the label side down.

T: Insert the disc with the label side up.

D: ERROR-14

C: An unrecorded CD-R is being used.

T: Check the disc.

D: Display

C: Cause

T: Treatment

D: ERROR-10, 11, 12, 14, 17, 30, A0

C: Electrical or mechanical fault.

T: Turn off the car's ignition and turn it back on again. Or change the source to another one and then change it back to CD.

D: HEAT

C: The CD player's internal temperature is high.

T: Wait until the CD player's internal temperature goes down.

Additional Functions

Parts Identification

[12] Illumination

Switching Illumination Color

The illumination color can be set to amber or green.

Press button [12] for at least 2 seconds.

Repeat this operation to switch between amber and green.

Connecting the Units

Note:

- This unit is for vehicles with a 12-volt battery and negative grounding. Before installing it in a recreational vehicle, truck, or bus, check the battery voltage.
- To avoid shorts in the electrical system, be sure to disconnect the battery \ominus cable before beginning installation.
- After completing installation and wiring, double check that there are no mistakes. Re-install any parts removed from the car during installation, then connect the battery negative terminal.
- Refer to the owner's manual for details on connecting the various cords of the power amp and other units, then make connections correctly.
- Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap adhesive tape around them where they lie against metal parts.
- Route and secure all wiring so it cannot touch any moving parts, such as the gear shift, handbrake, and seat rails. Do not route wiring in places that get hot, such as near the heater outlet. If the insulation of the wiring melts or gets torn, there is a danger of the wiring short-circuiting to the vehicle body.
- Don't pass the orange lead through a hole into the engine compartment to connect to the battery. This will damage the lead insulation and cause a very dangerous short.
- Do not shorten any leads. If you do, the protection circuit may fail to work when it should.
- Never feed power to other equipment by cutting the insulation of the power supply lead of the unit and tapping into the lead. The current capacity of the lead will be exceeded, causing over heating.
- When replacing fuses, be sure to use only fuses of the rating prescribed on the fuse holder.
- Since a unique BPTL circuit is employed, never wire so the speaker leads are directly grounded or the left and right speaker \ominus leads are common.
- Speakers connected to this unit must be high-power type possessing maximum input of at least 22 W and impedance of 4 to 8 ohms. Connecting speakers with output and/or impedance values other than those noted here can damage the speakers.

- When the power amp is being linked with this system, be sure not to connect the blue lead to the amp's power terminal. Likewise, when linking this system with the auto-antenna, do not connect to power terminal for the antenna. Such connection can make overcurrent cause malfunctions.
- When the unit is mounted in a vehicle whose ignition switch does not have the ACC (accessory) position as shown in Fig. 2, be sure to connect the red lead of the unit to the terminal controlled by the ignition switch ON/OFF position. If you do not, the vehicle battery may go flat when you leave your vehicle for several hours.
(Fig. 1: ACC position/Fig. 2: No ACC position)

Connection Diagram (Fig. 3)

1. Power amp (sold separately)
2. Connecting cords with RCA pin plugs (sold separately)
3. Blue
4. Front/left speaker
5. Front/right speaker
6. Green
7. Gray
8. Green/black
9. Gray/black
10. Rear/left speaker
11. Rear/right speaker
12. Green/red
13. Gray/red
14. Black/green
15. Black/gray
16. Connected only when the optional amplifier is used. Nothing is connected when operating the built-in amplifier itself.
17. White
18. Red
19. Rear out
20. Front out (DEH-605RDS, DEH-405 and DEH-405SDK do not have this terminal.)
21. Antenna jack
22. Blue
To system control terminal of the power amp or Auto-antenna relay control terminal (Max. 300 mA 12 V DC).
23. Fuse holder
24. Fuse resistor
25. Black (ground)
To vehicle (metal) body.
26. Orange
To terminal always supplied with power regardless of ignition switch position.
27. Red
To electric terminal controlled by ignition switch (12 V DC) ON/OFF.



Fig.1

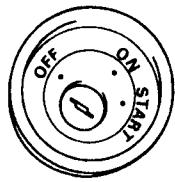


Fig.2

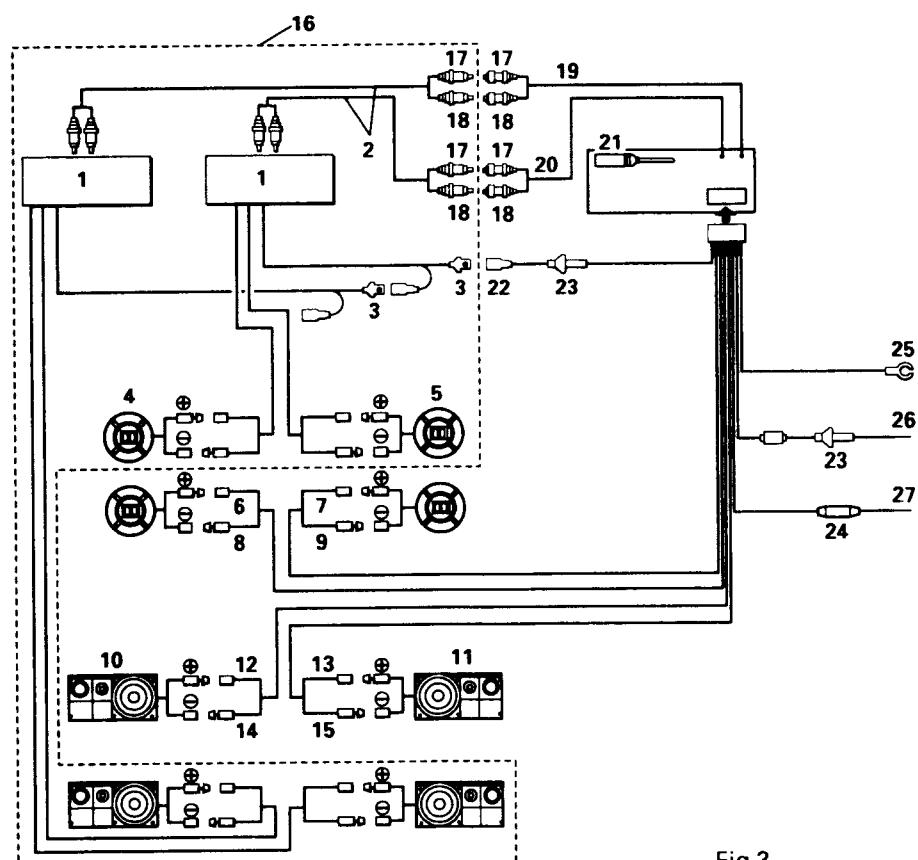


Fig.3

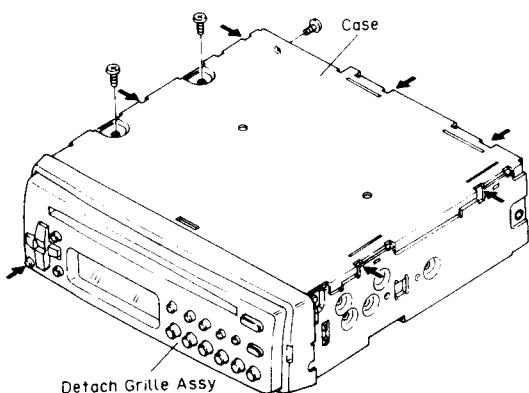
3. DISASSEMBLY

● Removing the Case

1. Remove the three screws.
2. Insert and turn a flat screwdriver at locations indicated by arrows to remove the case.

● Removing the Detach Grille Assy

1. Press the detach button, and then pull detach grille Assy.



● Removing the Chassis Unit

1. Remove the two screws C.
2. Remove the screw D and E.
3. Remove the screw F and then remove the holder.
4. Stretch the four claws.
5. Remove the chassis Unit

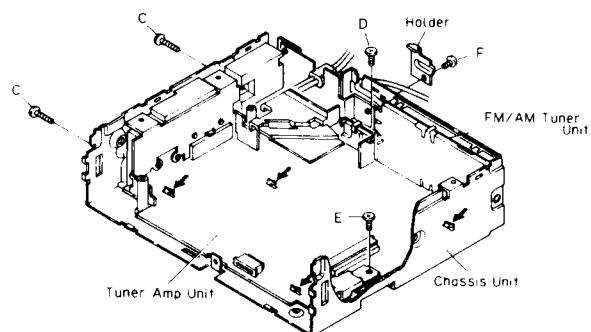


Fig.6

Fig.4

● Removing the Panel Unit

1. Remove the screw B and disconnect the two stoppers indicated by arrows.
2. Disconnect the connector.

● Removing the CD Mechanism Module

1. Remove the four screws A.
2. Disconnect the connector.
3. Remove the CD Mechanism Module.

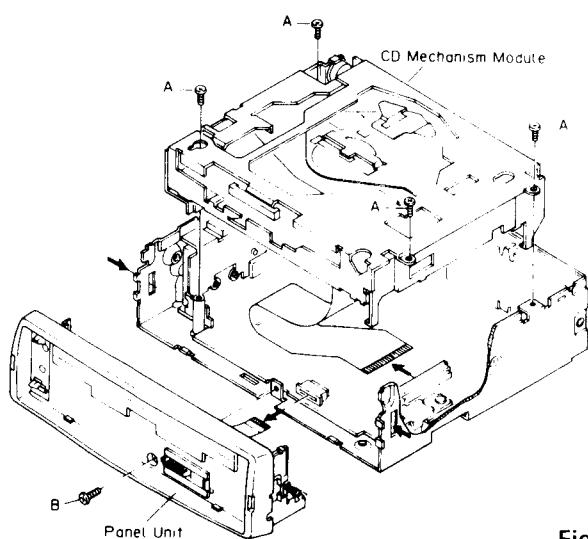
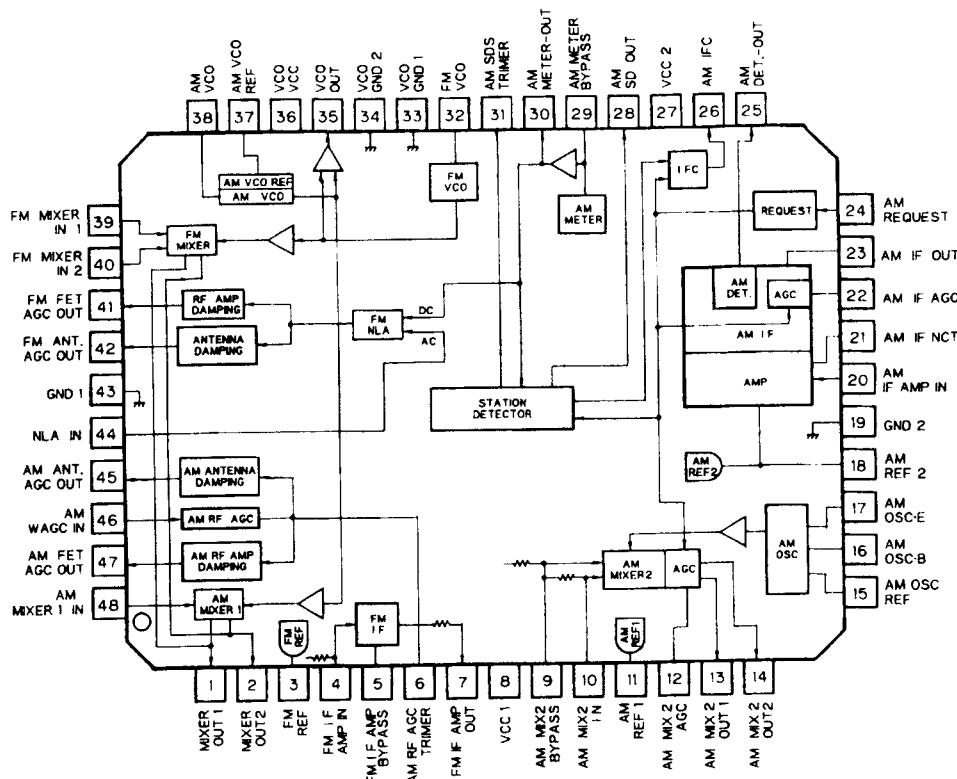


Fig.5

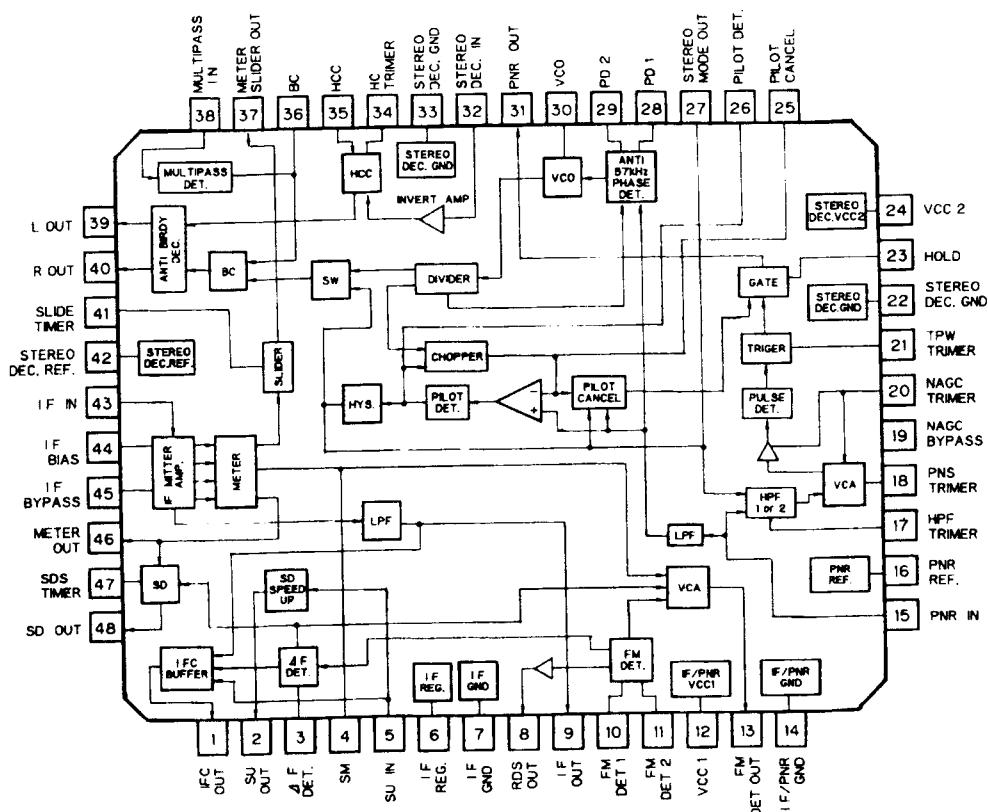
DEH-605RDS, 505SDK, 505, 405SDK, 405

● ICs

PA2021B

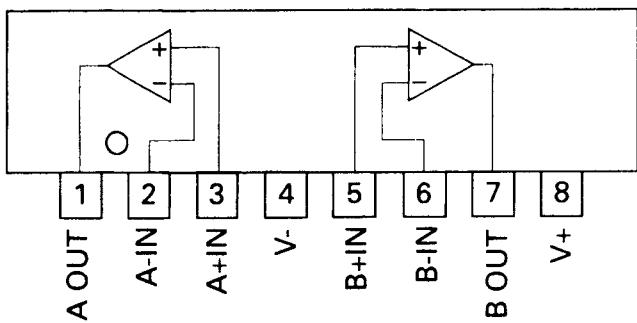


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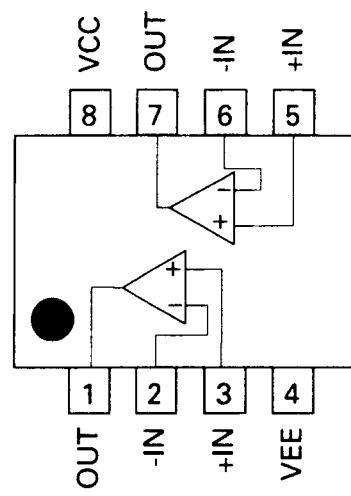


DEH-605RDS, 505SDK, 505, 405SDK, 405

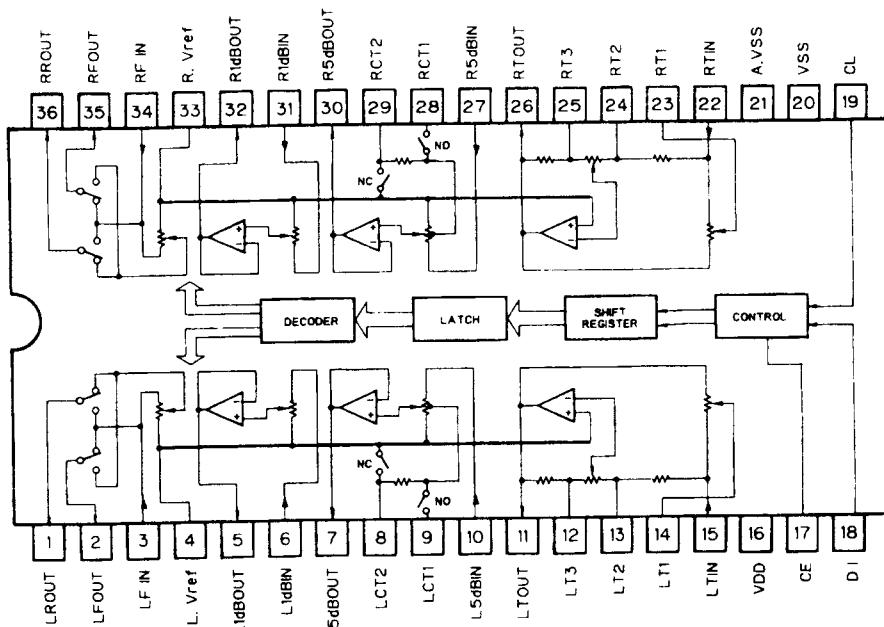
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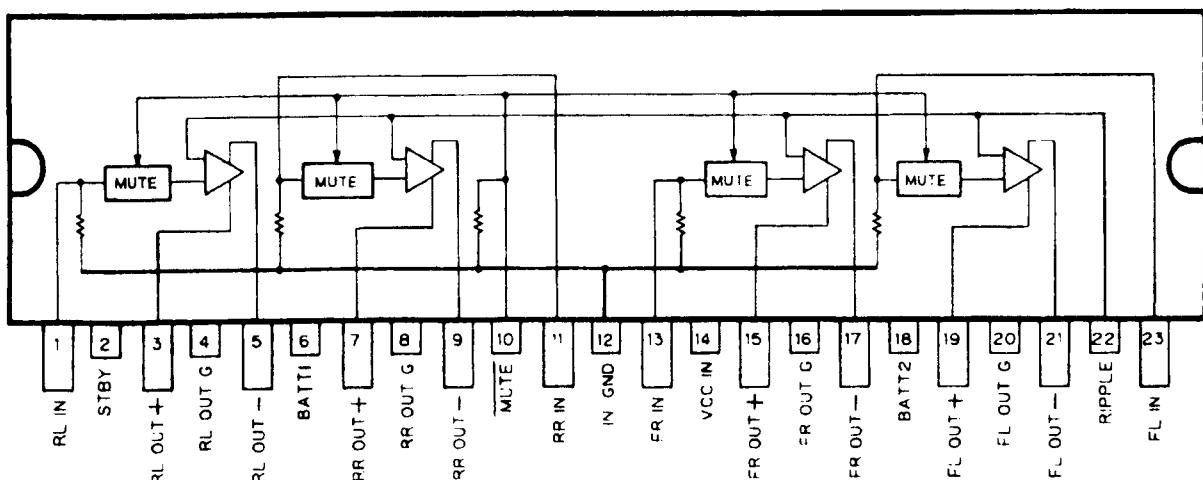
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*LC7538JMHS



PA3029A



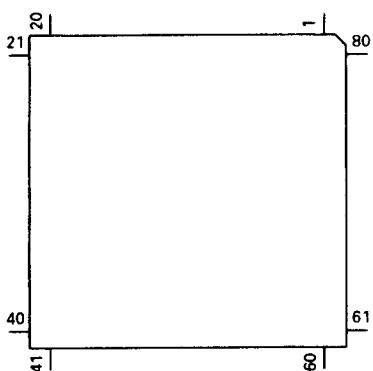
● Pin Functions(PDR009B)

Pin No.	Pin Name	I/O	Output Format	Function and Operation
1-3	KD3-KD1	I		Analog key input
4	AVSS	I		A/D converter GND
5,6	NC			Not used
7	AVREF1	I		D/A converter reference voltage
8	LCE	O		Chip enable output for LCD driver
9	LDT	O	C	Data output for LCD driver
10	RST	O	C	LSI reset output
11,12	NC			Not used
13	SK	I		SK signal input
14	XA0	O		Control signal distinguishing data from microcomputer
15	XSTB	O	C	LSI data output
16	XSI	I		LSI data input
17	XSO	O	C	LSI data output
18	XCK	O	C	LSI clock output
19	CONT	O	C	Servo driver power supply control
20	LOAD	O	C	Loading motor LOAD control
21	EJET	O	C	Loading motor EJECT control
22	CD5VON	O	C	CD +5V control
23	NC			Not used
24	CDMUTE	O	C	CD mute output
25	TMUTE	O	C	Tuner mute output
26	VDCONT	O	C	VD control input
27	FOK	I		FOK signal input
28	MIRR	I		Mirror detector input
29	LOCK	I		Spindle lock detector input
30	CLAMP	I		Disc clamp sense input
31	HOME	I	C	Home position detector input
32	FECNT	O	C	FE output control pin
33	VSS			GND
34	VDSENS	I		VD over voltage sense input
35	VMC	O	C	Loading motor driver power supply
36	NC			Not used
37	ADENA	O	N	A/D converter reference voltage output
38	NC			Not used
39	CDPW	O	N	CD power control
40	LCK	O		Clock output for LCD driver
41	SYSPW	O	C	System power supply control output
42	BLGTA	O	C	LCD back light amber control output
43	BLGTG	O	C	LCD back light green control output
44	SWVDD	O	C	Key board unit power supply control output
45	PEE	O	C	Beep tone output
46	VDT	O	C	Data output for electronic volume
47	VST	O	C	Strobe pulse output for electronic volume
48	VCK	O	C	Clock output for electronic volume
49	PCL	O	C	Clock adjustment output
50	FM/AM	O	C	FM/AM power select output
51	MONO	O	C	Forced mono output
52-55	SIMK0-3	I		Model select input
56	MUTE	O	C	Mute output
57	NC			Not used
58	DK	I		DK signal input
59	SD	I		SD input
60	RESET	I		Reset input
61	REMIN	I		Remote control signal input
62	BSENS	I		Back up power sense input
63	ASENS	I		ACC power sense input
64	PDI	I		PLL data input

DEH-605RDS, 505SDK, 505, 405SDK, 405

Pin No.	Pin Name	I/O	Output Format	Function and Operation
65	PDO	O	C	Data output for PLL IC
66	PCK	O	C	Serial clock output for PLL IC
67	PCE	O	C	Chip enable output for PLL IC
68	VDD			Power supply
69,70	X2,X1			Crystal oscillator connection pin
71	IC			Connect to GND
72	XT2			Not used
73	TESTIN	I		Test program start input
74	AVDD			Positive power supply terminal for analog circuit
75	AVREF0	I		A/D converter reference voltage
76	SL	I		SD level input from tuner
77	TEMP	I		Temperature detector
78	DINC	I		Disc insert sense input
79	EJTD	I		Disc eject position sense input
80	KD0	I		Analog key input

*PDR009B

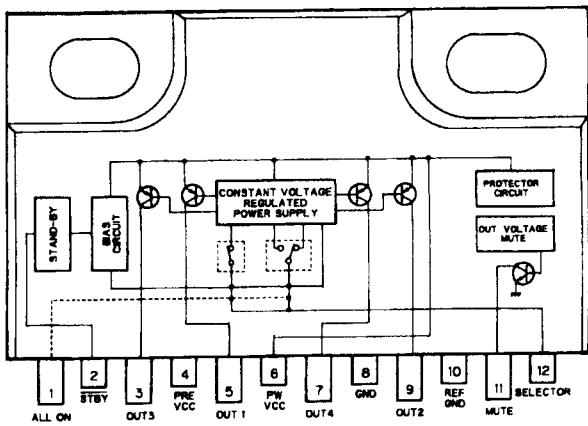


Output Format	Meaning
C	CMOS
N	N channel open drain

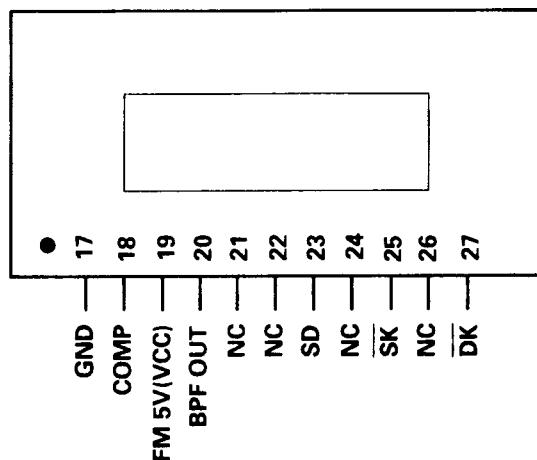
IC's marked by * are MOS type.

Be careful in handing them because they are very liable to be damaged by electrostatic induction.

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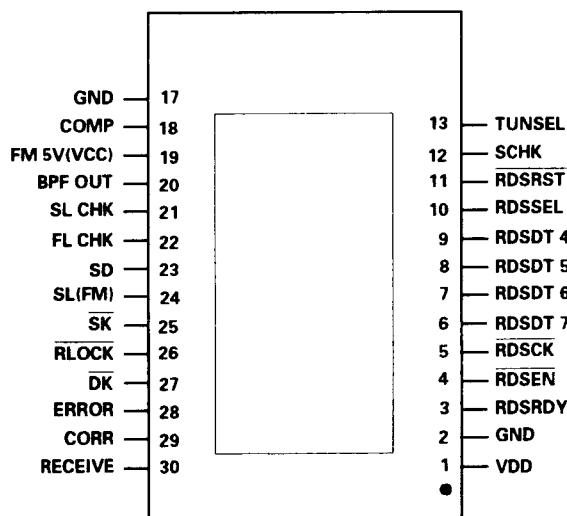
CWV1045



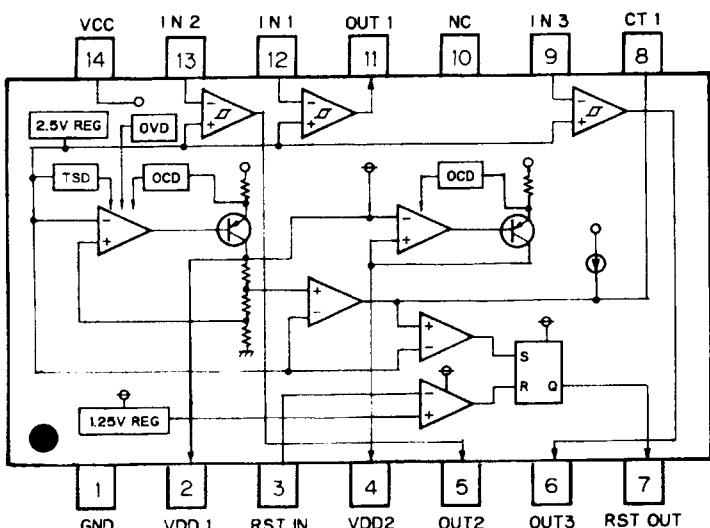
● Pin Functions (CWV1044)

Pin No.	Pin Name	I/O	Function and Operation
1	VDD		Power supply for RDS controller
2	GND		GND
3	RDSRDY	I	Ready input from system control IC
4	RDSEN	O	Enable output for system control IC
5	RDSCK	I	Serial clock input from system control IC
6-9	RDSDT 7-4	I/O	Data input/output to system control IC
10	RDSSEL	I	Select input from system control IC
11	RDSRST	I	Reset input from system control IC
12	SCHK	I	Unit check input
13	TUNSEL	I	FM/AM tuner unit select input
14-16	VACANT		
17	GND		GND
18	COMP	I	FM composite signal input
19	FM 5V(VCC)		Power supply decoder
20	BPF OUT	O	Band pass filter test output
21	SL CHK	O	SL check output
22	FL CHK	O	FL check output
23	SD	I	RDS decode control input
24	SL(FM)	I	Signal level input from tuner
25	SK	I	SK signal detect input
26	RLOCK	O	RDS test output
27	DK	O	DK signal detect output
28	ERROR	O	Disapprove of error correction output
29	CORR	O	Error output
30	RECEIVE	O	RDS synchronizing test output

CWV1044



PAJ001A

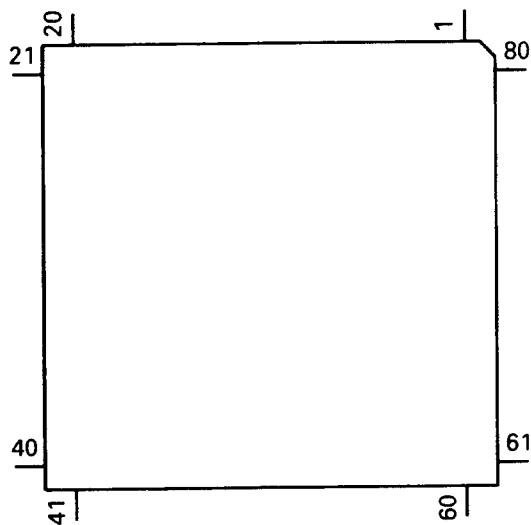


● Pin Functions(PD4483B)

Pin No.	Pin Name	I/O	Output Format	Function and Operation
1	NC	I		Not used
2	RDSRST	O	C	Reset output for RDS IC
3	RDSSEL	O	C	Select output for RDS IC
4	AVSS	I		A/D converter GND
5	RDSEN	O	C	Enable output for RDS IC
6	RDSRDY	I		Ready input from RDS IC
7	AVREF1	I		D/A converter reference voltage
8	KYDT	I		Key data input
9	DPDT	O	C	Display data output
10	RST	O	C	LSI reset output
11	RDSDI	I		Serial data input for RDS IC
12	RDSDO	O	C	Serial data output for RDS IC
13	RDSCK	O	C	Serial clock output for RDS IC
14	XAO	O		Control signal distinguishing data from microcomputer
15	XSTB	O	C	LSI strobe output
16	XSI	I		LSI data input
17	XSO	O	C	LSI data output
18	XSCX	O	C	LSI clock output
19	CONT	O	C	Servo driver power supply control
20	LOAD	O	C	Loading motor LOAD control
21	EJET	O	C	Loading motor EJECT control
22	CD5VON	O	C	CD +5V control
23	NC			Not used
24	CDMUTE	O	C	CD mute output
25	TMUTE	O	C	Tuner mute output
26	VDCONT	O	C	VD control input
27	FOK	I		FOK signal input
28	MIRR	I		Mirror detector input
29	LOCK	I		Spindle lock detector input
30	CLAMP	I		Disc clamp sense input
31	HOME	I	C	Home position detector input
32	FECNT	O	C	FE output control pin
33	VSS			GND
34	VDSENS	I		VD over voltage sense input
35	VMC	O	C	Loading motor driver power supply
36	NC			Not used
37	ADENA	O	N	A/D converter reference voltage output
38	NC			Not used
39	CDPW	O	N	CD power control
40	NC			Not used
41	SYSPW	O	C	System power supply control output
42	BLGT	O	C	LCD back light control output
43	VLCDPW	O	C	Power supply control output for LCD
44	SWVDD	O	C	Key board unit power supply control output
45	PEE	O	C	Beep tone output
46	VDT	O	C	Data output for electronic volume
47	VST	O	C	Strobe pulse output for electronic volume
48	VCK	O	C	Clock output for electronic volume
49	PCL	O	C	Clock adjustment output
50	FM/AM	O	C	FM/AM power select output
51	MONO	O	C	Forced mono output
52-55	NC			Not used
56	MUTE	O	C	Mute output
57	NC			Not used
58	NC			Not used
59	SD	I		SD input
60	RESET	I		Reset input

Pin No.	Pin Name	I/O	Output Format	Function and Operation
61	NC			Not used
62	BSENS	I		Back up power sense input
63	ASENS	I		ACC power sense input
64	PDI	I		PLL data input
65	PDO	O	C	Data output for PLL IC
66	PCK	O	C	Serial clock output for PLL IC
67	PCE	O	C	Chip enable output for PLL IC
68	VDD			Power supply
69,70	X2,X1			Crystal oscillator connection pin
71	IC			Connect to GND
72	XT2			Not used
73	TESTIN	I		Test program start input
74	AVDD			Positive power supply terminal for analog circuit
75	AVREF0	I		A/D converter reference voltage
76	SL	I		SD level input from tuner
77	TEMP	I		Temperature detector
78	DINC	I		Disc insert sense input
79	EJTD	I		Disc eject position sense input
80	DSENS	I		Grille detach sense

*PD4483B



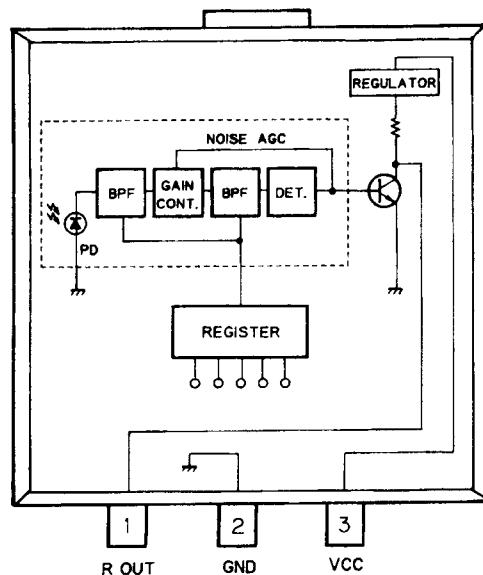
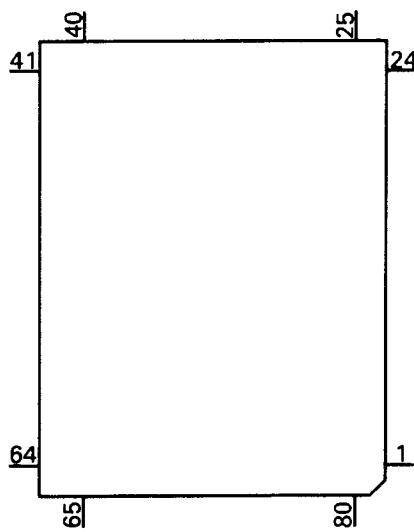
Output Format	Meaning
C	CMOS
N	N channel open drain

● Pin Functions (PD6122A)

Pin No.	Pin Name	I/O	Function and Operation
1	VSS		GND
2	X1		Crystal oscillator connection pin
3	X0		Crystal oscillator connection pin
4	RESET	I	Reset Input
5,6	MOD1,0	I	Model select input
7	DILMX	O	Function LED select output
8	KYDT	O	Key data output
9	DPDT	I	Display data input
10	REMIN	I	Remote control pulse input
11	SILMO	O	Illumination color select output
12	SILMG	O	Function LED select output
13-16	KD4-KDT	I	Key sense input
17-22	KDT6-1	O	Key strobe output
23	VDD		5V
24-34	NC		Not used
35-73	SEG38-0		LCD segment output
74-77	COM3-0	O	LCD common output
78-80	VLCD-V1		Power supply terminal

*PD6122A

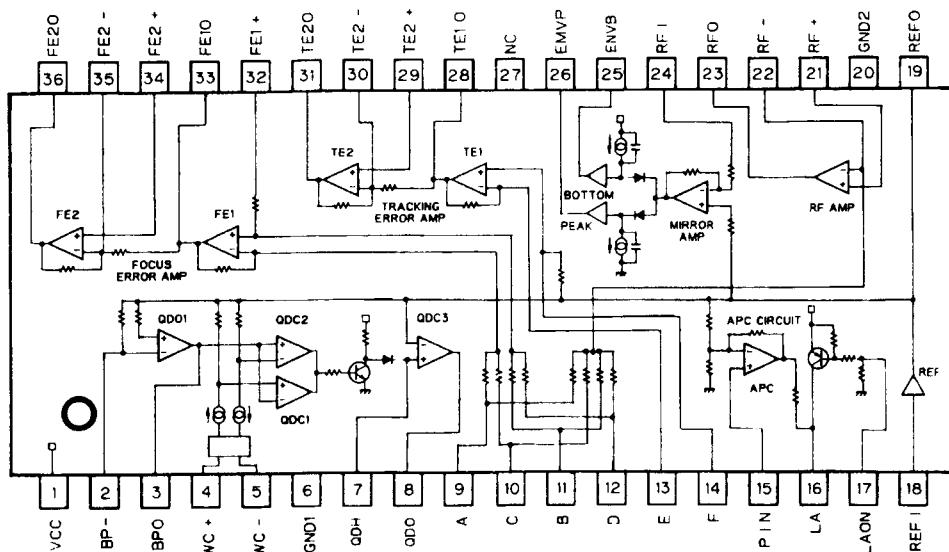
*RPM-678CBR



● Pin Functions(UPC2571GS)

Pin No.	Pin Name	I/O	Function and Operation
1	VCC		VCC
2	BP-	I	TE zero cross amplifier input
3	BPO	O	TE zero cross amplifier output
4	WC+		Not used
5	WC-		Not used
6	GND1		GND
7	QDH		Not used
8	QDO		Not used
9	A	I	A signal input
10	C	I	C signal input
11	B	I	B signal input
12	D	I	D signal input
13	E	I	E signal input
14	F	I	F signal input
15	PIN	I	APC amplifier input
16	LA	O	APC amplifier output
17	LAON		APC amplifier ON/OFF switching
18	REFI	I	Reference voltage input
19	REFO	O	Reference voltage output
20	GND2		GND
21	RF+	I	RF amplifier non-inverting input
22	RF-	I	RF amplifier inverting input
23	RFO	O	RF amplifier output
24	RFI		Not used
25	ENVB		Not used
26	ENBP		Not used
27	NC		Non connection
28	TE1O	O	Tracking error amplifier 1 output
29	TE2+	I	Tracking error amplifier 2 non-inverting input
30	TE2-	I	Tracking error amplifier 2 inverting input
31	TE2O	O	Tracking error amplifier 2 output
32	FE1+	I	Focus error amplifier 1 non-inverting input
33	FE1O	O	Focus error amplifier 1 output
34	FE2+	I	Focus error amplifier 2 non-inverting input
35	FE2-	I	Focus error amplifier 2 inverter input
36	FE2O	O	Focus error amplifier 2 output

UPC2571GS

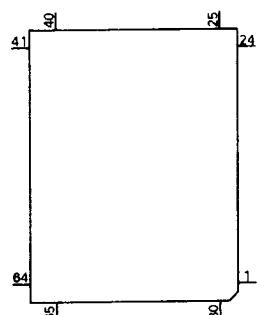


● Pin Functions(UPD63700GF)

Pin No.	Pin Name	I/O	Function and Operation
1	D.GND		Logic circuit GND
2	RFOK	O	RFOK detection signal output terminal
3	MIRR	O	MIRR detection signal output terminal
4	TBC	I	Tracking filter bank switching terminal
5	HOLD	I	Hold control signal input terminal
6	D.VDD		VDD for logic circuit
7	RST	I	System reset
8	AO	I	Control signal distinguishing data from microcomputer
9	STB	I	Signal latching serial data inside LSI
10	SCK	I	Clock input terminal for serial data input and output
11	SO	O	Serial data and status signal output
12	SI	I	Serial data input
13	TM2	I	Double speed playback control terminal
14	D.GND		Logic circuit GND
15	TEST	I	Test terminal
16	STBY	I	Stand-by input terminal
17	CTLV	I	Control terminal for clock generation VCO used by digital PLL in double speed playback mode
18	POUT	O	Output terminal for phase comparison between EFM signal and bit clock
19	D.GND		Logic circuit GND
20	VCO	I	Inverter input
21	VCO	O	Inverter output
22	D.VDD		VDD for logic circuit
23	PLCK	O	Bit clock monitor terminal
24	LOCK	O	"H" when synchronization signal and frame counter output coincide at EFM demodulator
25	WFCK	O	Signal issuing one-frame period by bit clock dividing signal
26	RFCK	O	Oscillation clock divider signal, output pin for signal giving 1-frame sync.
27	C4M	O	Output terminal for signal having four the frequency of LRCK
28	C16M	O	Oscillation clock output terminal
29	D.GND		Logic circuit GND
30	XTAL	I	Oscillation continuation terminal
31	XTAL	O	Oscillation continuation terminal
32	D.VDD		VDD for logic circuit
33	SCKO	O	Clock output terminal for audio serial data
34	LRCK	O	Signal distinguishing between left and right channel DOUT terminal output
35	DOUT	O	Serial audio data output terminal
36	TX	O	Digital audio interface data output terminal
37	FLAG	O	Flag signal indicating that the current audio data output of incorrectable data
38	EMPH	O	Emphasis information output
39	WDCK	O	Output terminal for signal having double the frequency of LRCK
40	C2D3	O	Output terminal indicating C2 error correction status
41	SFSY	O	Signal indicating subcode one-frame synchronization
42	SBSY	O	Signal indicating head of subcode block
43	SBSO	O	Subcode data output terminal
44	SBCK	I	Subcode data read clock input terminal
45	D.GND		Logic circuit GND
46,47	C1D1,C1D2	O	Output terminal indicating C1 error correction status
48,49	C2D1,C2D2	O	Output terminal indicating C2 error correction status
50	T4	I	Selects between focus and tracking modulation mode
51	T5	I	Selects motor PWM output mode
52	T6	I	Sets focus PWM output mode
53	T7	I	Sets tracking PWM output mode
54	D.VDD		VDD for logic circuit
55	MRD	O	PWM negative output terminal for the spindle loop filter
56	MFD	O	PWM positive output terminal for the spindle loop filter
57	SRD	O	PWM negative output terminal for the thread loop filter
58	SFD	O	PWM positive output terminal for the thread loop filter

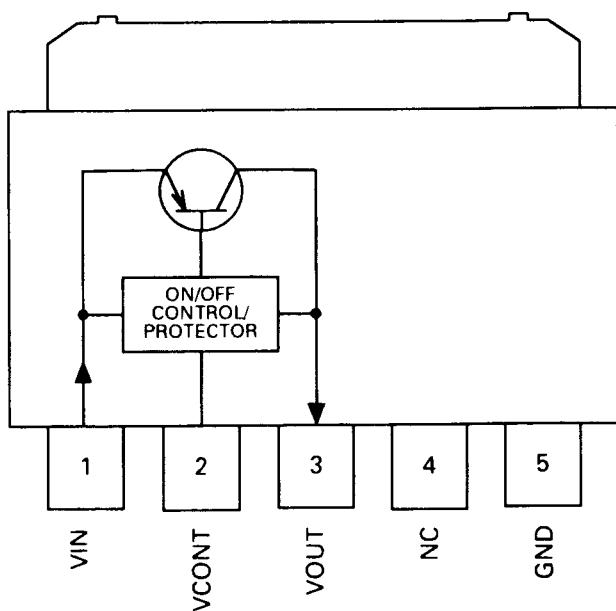
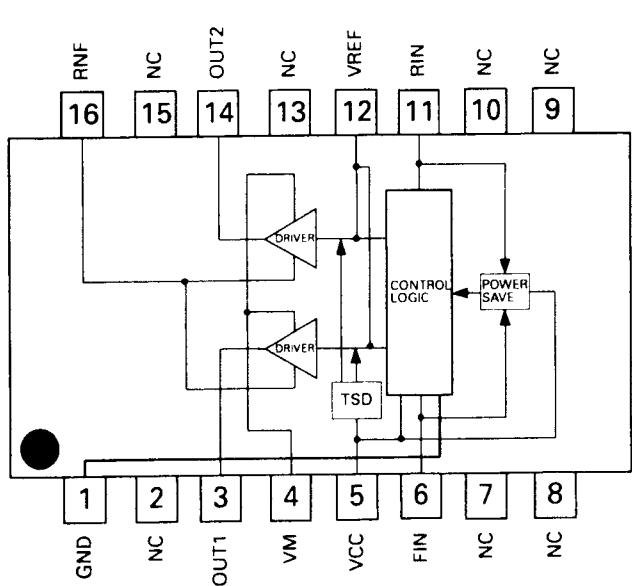
Pin No.	Pin Name	I/O	Function and Operation
59	D.GND		Logic circuit GND
60	TRD	O	PWM negative output terminal for the tracking loop filter
61	TFD	O	PWM positive output terminal for the tracking loop filter
62	FRD	O	PWM negative output terminal for the focus loop filter
63	FFD	O	PWM positive output terminal for the focus loop filter
64	D.VDD		VDD for logic circuit
65	OUTSEL	I	Sets PWM output mode for the motor system
66	TEC1	I	Tracking error input terminal
67	TEC0	I	Tracking error input terminal
68	A.VDD		VDD for analog circuit
69,70	VR2,VR1	I	A/D converter input
71	TE	I	Tracking error input terminal
72	FE	I	Focus error input terminal
73	RFB	I	RFB signal input terminal
74	RFP	I	RFP signal input terminal
75	A.GND		Analog circuit GND
76	REFOUT	O	A/D converter midpoint voltage output terminal inside LSI
77	RF1	I	RF signal input terminal for EFM comparator
78	ASI	I	Level comparing input for RF signal comparison
79	EFM	O	EFM signal output terminal
80	A.VDD		VDD for analog circuit

*UPD63700GF



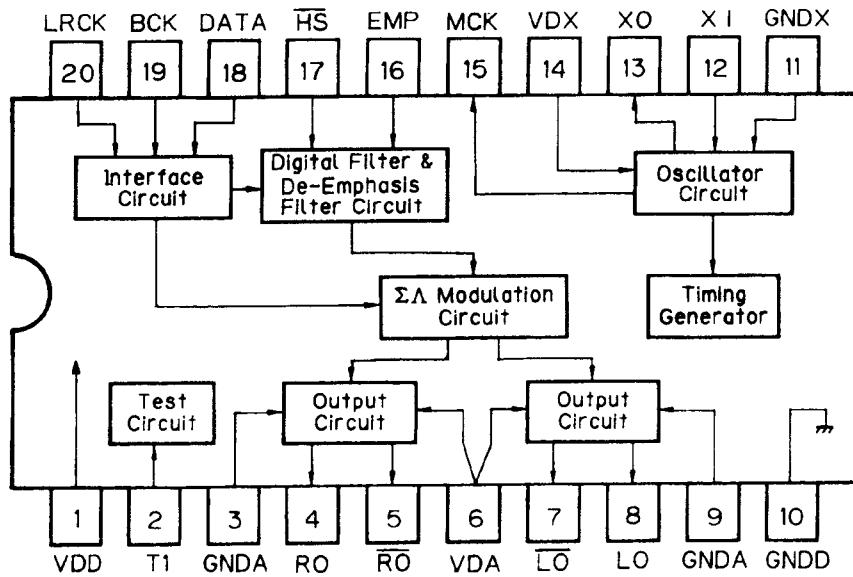
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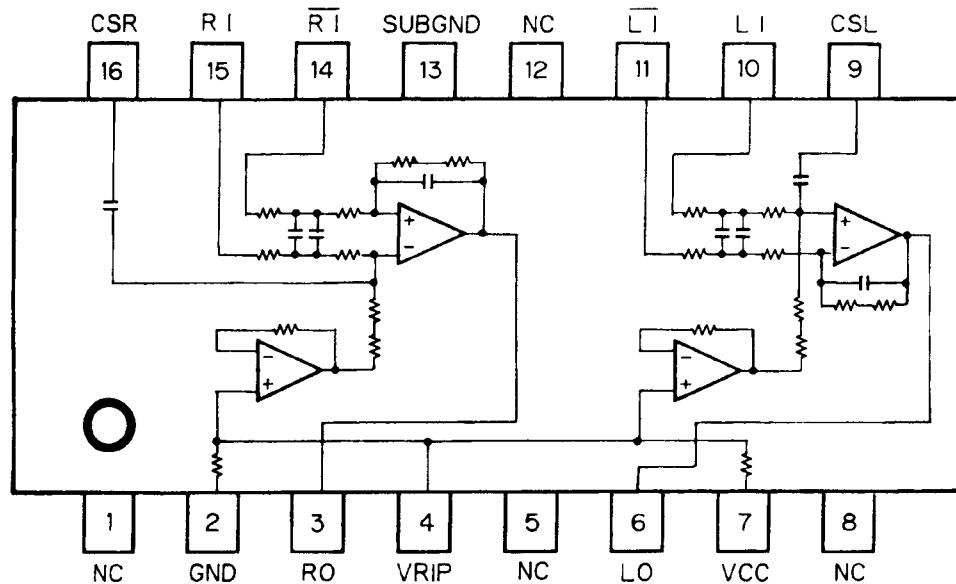


DEH-605RDS, 505SDK, 505, 405SDK, 405

*TC9268F



TA2063F



4. ADJUSTMENT

4.1 CD PLAYER SECTION

1) Precautions

- This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to REFO(approx. 2.5V) instead of GND. If REFO and GND are connected to each other by mistake during adjustments,not only will it be impossible to measure the potential correctly,but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this,take special note of the following.
Do not connect the negative probe of the measuring equipment to REFO and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to REFO with the channel 2 negative probe connected to GND.
Since the frame of the measuring instrument is usually at the same potential as the negative probe,change the frame of the measuring instrument to floating status.
If by accident REFO comes in contact with GND,immediately switch the regulator or power OFF.
- Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.
- Before proceeding to further adjustments and measurements after switching regulator ON,let the player run for about one minute to allow the circuits to stabilize.
- Since the protective systems in the unit's software are rendered inoperative in test mode,be very careful to avoid mechanical and /or electrical shocks to the system when making adjustment.
- Test mode starting procedure
Switch ACC,back-up ON while pressing the **4** and **6** keys together.

· Test mode cancellation
Switch ACC,back-up OFF.

· Disc detection during loading and eject operations is performed by means of a photo transistor in this unit.Consequently,if the inside of the unit is exposed to a strong light source when the outer casing is removed for repairs or adjustment,the following malfunctions may occur.

*During PLAY, even if the eject button is pressed,the disc will not be ejected and the unit will remain in the PLAY mode.

*The unit will not load a disc.

When the unit malfunctions this way,either re-position the light source,move the unit or cover the photo transistor.

· When loading and unloading discs during adjustment procedures,always wait for the disc to be properly clamped or ejected before pressing another key. Otherwise, there is a risk of the actuator being destroyed.

· Turn power off when pressing the button **TR+** or the button **TR-** key for focus search in the test mode. (Or else lens may stick and the actuator may be damaged.)

· SINGLE/4TRK/10TRK/32TRK will continue to operate even after the key is released.Tracking is closed the moment C-MOVE is released.

· JUMP MODE resets to SINGLE as soon as power is switched off.

● Flow Chart

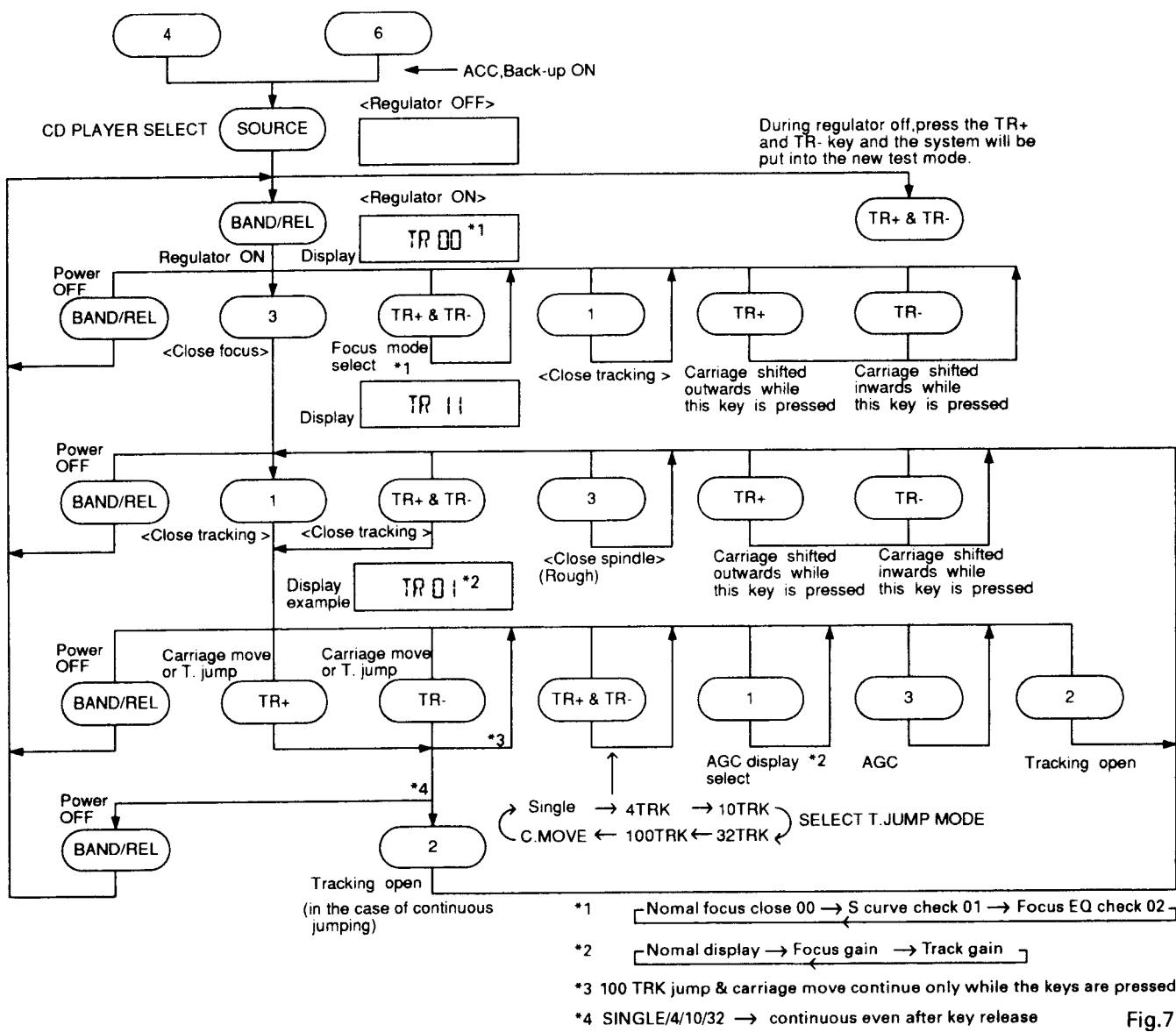


Fig.7

● Measuring Equipment and Jigs

Adjustment	Measuring equipment & jigs
1 Tracking Error Offset Adjustment 1	DC V Meter
2 Grating Check / Adjustment 1	Oscilloscope, ABEX TCD-784, L.P.F., Clock Driver
3 Grating Adjustment 2	Oscilloscope, Grating Adjustment Filter (B.P.F.), mV Meter, ABEX TCD-784, L.P.F., Clock Driver
4 Tracking Balance Adjustment 1	Oscilloscope, Low-pass Filter, ABEX TCD-784
5 Focus Bias Adjustment	Oscilloscope, ABEX TCD-784
6 RFO Offset Adjustment	Oscilloscope, ABEX TCD-784
7 Tracking Error Offset Adjustment 2	DC V Meter
8 Tracking Balance Adjustment 2	Oscilloscope, Low-pass Filter, ABEX TCD-784

● Adjustment Point

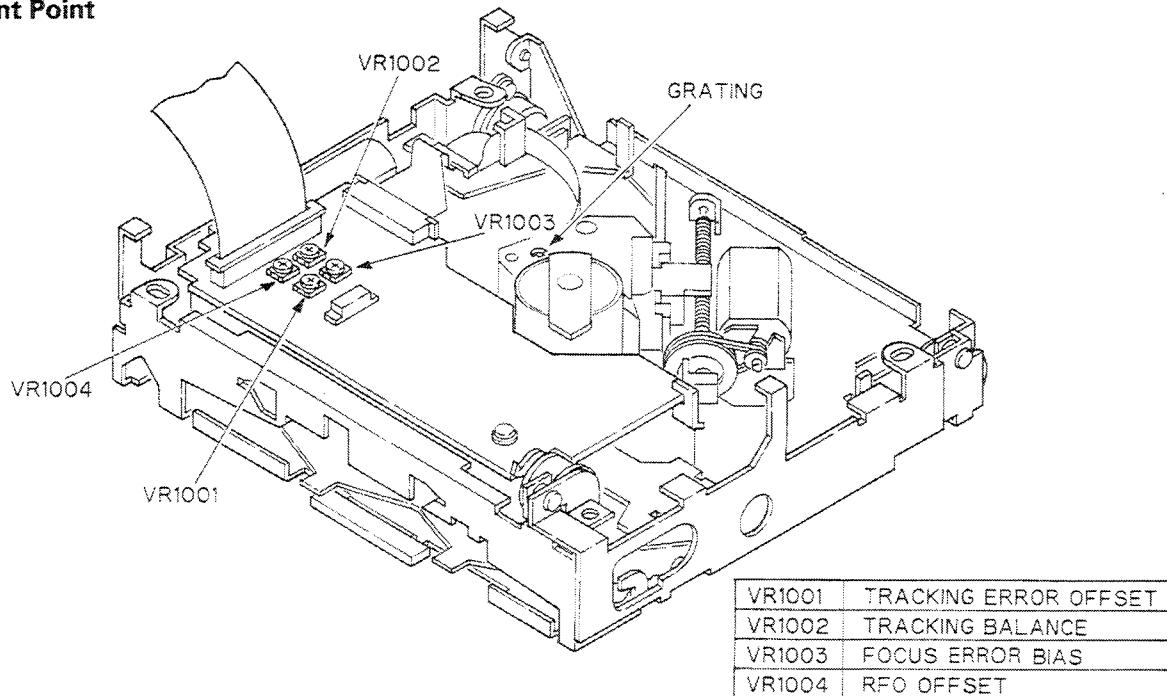


Fig.8

● Test Point

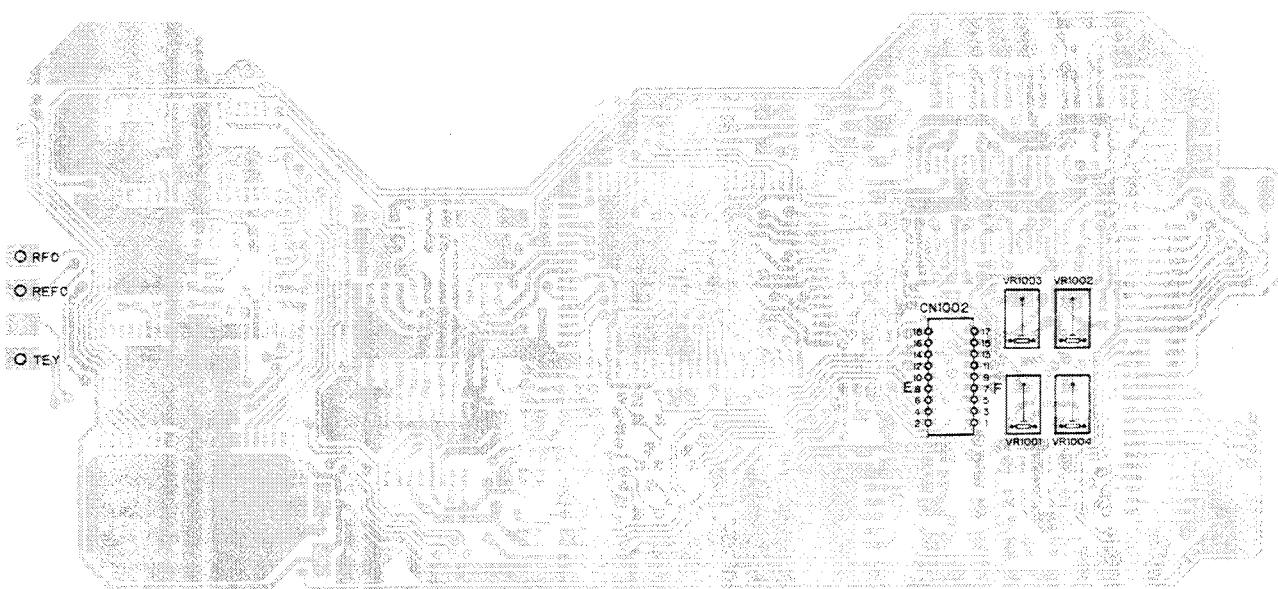
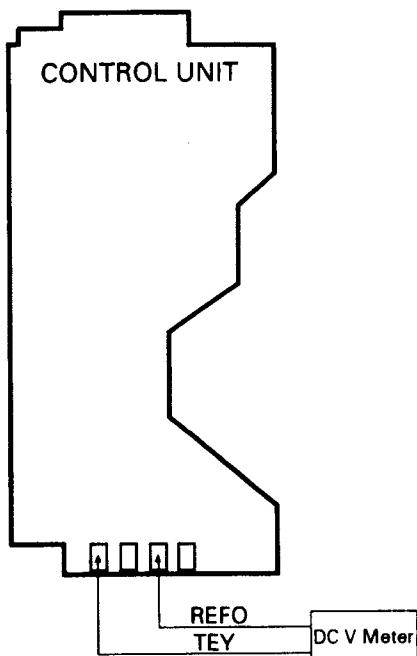


Fig.9

1 Tracking Error Offset Adjustment 1

Purpose :	To adjust the offset of the tracking pre-amp to zero
Symptoms of Mal-adjustment :	
Track search NG, Carriage runaway, Poor playability	
Measuring Equipment / Jig	· DC V Meter
Measuring Point	· TEY
Test Disc , Mode	· No disc, TEST MODE
Adjustment Point	· VR1001(TE OFFSET VR)

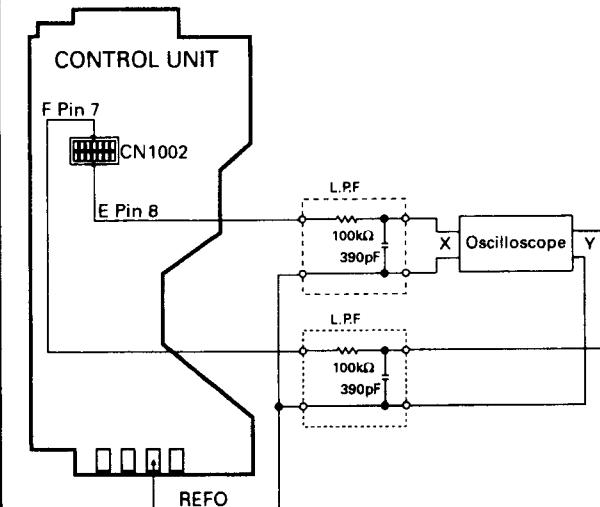


Adjustment Procedure

- 1.Switch the regulator on.
- 2.Using VR1001, adjust TEY to $0 \pm 25\text{mV}$ w.r.t. REFO.

2 Grating Check / Adjustment 1

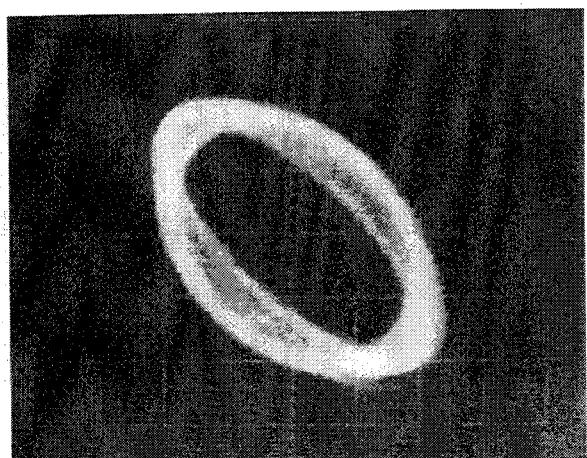
Purpose :	To check that the PU grating is correctly aligned after the PU unit has been replaced
Symptoms of Mal-adjustment :	
Unable to play disc, track skip during search, search NG	
Measuring Equipment / Jig	· Oscilloscope, L.P.F., Clock Driver
Measuring Point	· E, F
Test Disc , Mode	· ABEX TCD-784, TEST MODE
Adjustment Point	· Grating hole



Adjustment Procedure

- 1.Load disc and switch regulator on.
- 2.Position the PU in the center of the disc using the **TR+ & TR-** keys.
- 3.Press key **3** to close focus and once more to close spindle.
- 4.Refering to the photographs given check that the grating is within $\pm 45^\circ$. If not, it should be possible to make a fine adjustment to the grating by **slowly** tuning the grating screw. If, however during the adjustment the lissajous figure is seen to "FLIP" then the null point must be found and the adjustment made from there(see next section).

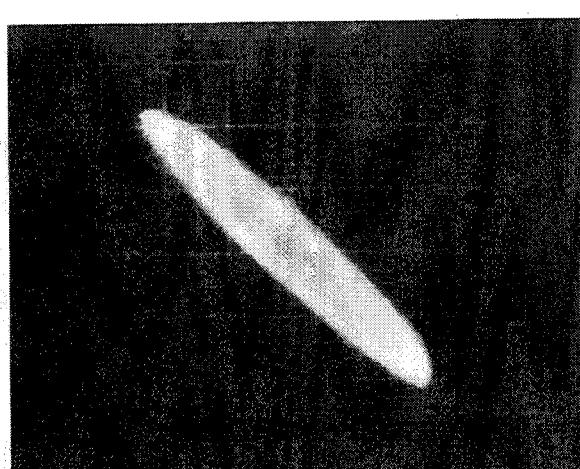
Lissajous figure (AC input)
Horizontal axis E 10mV/div.
Vertical axis F 10mV/div.



Waveform 1



Waveform 2



Waveform 3

3 Grating Adjustment 2

Purpose :

This needs to be done if the previous adjustment was unsuccessful

Symptoms of Mal-adjustment :

Unable to play disc, track skipping, track search NG

Measuring Equipment / Jig

Oscilloscope, Grating Adjustment filter (BPF), mV Meter, L.P.F., Clock Driver

Measuring Point

TEY, E, F

Test Disc , Mode

ABEX TCD-784, TEST MODE

Adjustment Point

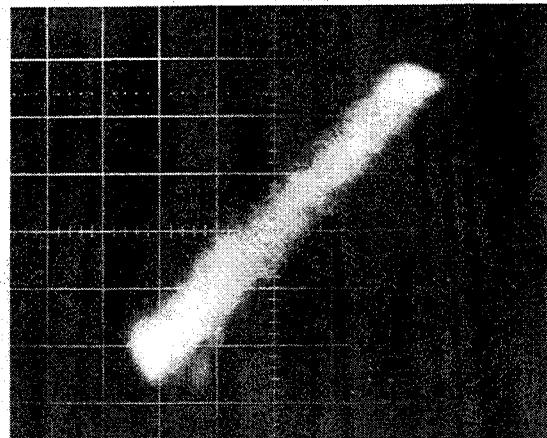
Grating hole

Lissajous figure (AC input)

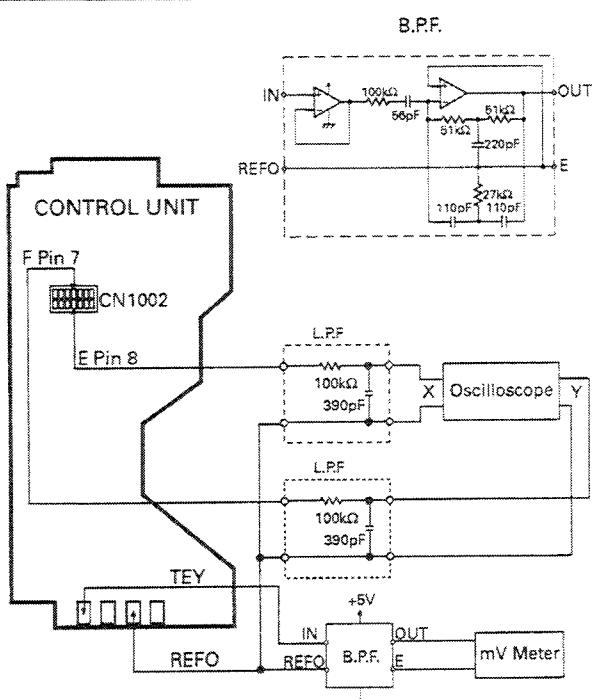
Horizontal axis E 10mV/div.

Vertical axis F 10mV/div.

Null Point=180°



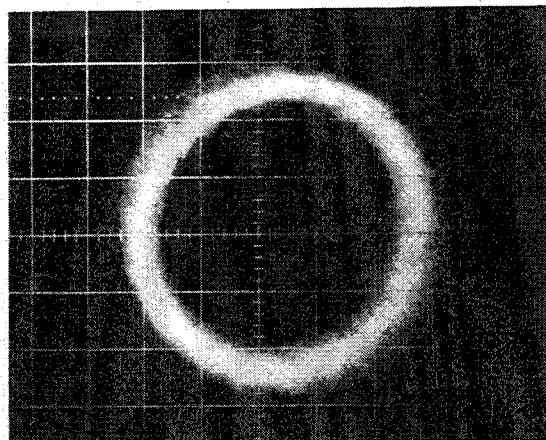
Waveform 4



Adjustment Procedure

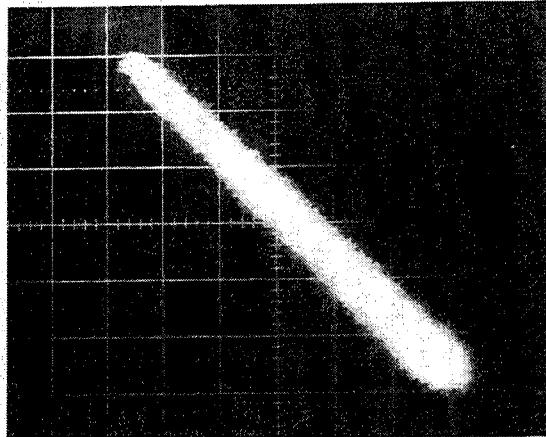
1. Load disc and switch regulator on.
2. Position PU unit in the center of the disc using the TR+ & TR- keys.
3. Press key 3 to close focus and press once more to close spindle.
4. While monitoring the output of the BPF connected to TEY, slowly turn the grating screw. The output voltage should pass through many minimums; search for the minimum which is clearly smaller than the rest - this is the "null point", where the E & F sub-beams are lined up with the tracks on the disc.
5. From this null point, turn the grating screw clockwise (as seen from the underside of the PU unit) until the lissajous waveform is a single line (or close as possible) as shown in the photograph.

"Rough" adjustment=90°



Waveform 5

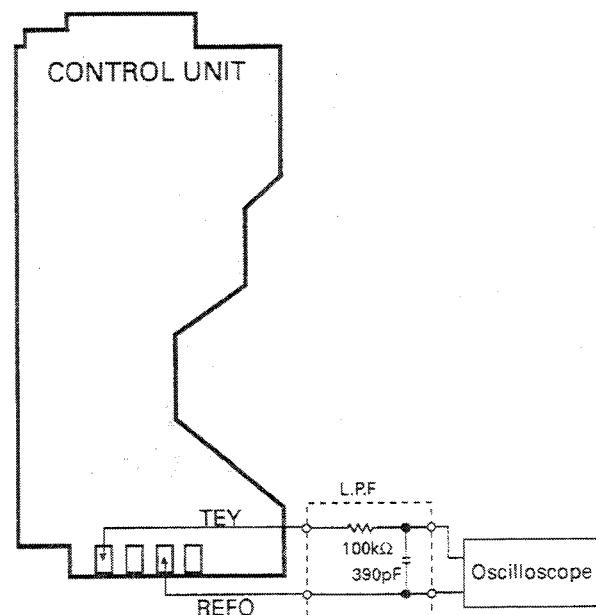
Final adjustment=0°



Waveform 6

4 Tracking Balance Adjustment 1

Purpose :	To equate the sensitivity of the F channel to that of the E channel
Symptoms of Mal-adjustment :	Track search NG, Poor playability carriage runaway
Measuring Equipment / Jig	Oscilloscope, L.P.F.
Measuring Point	TEY
Test Disc , Mode	ABEX TCD-784, TEST MODE
Adjustment Point	VR1002 (T.BAL VR)



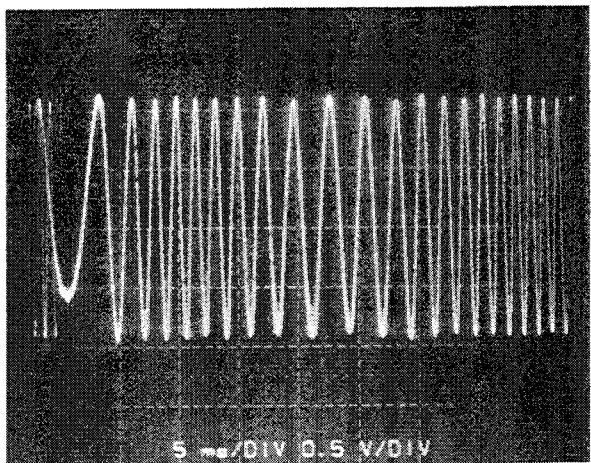
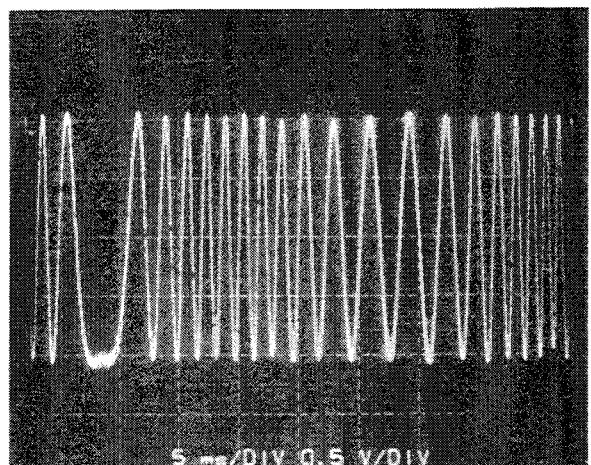
Adjustment Procedure

- 1.Load Disc and switch the regulator on.
- 2.Position the PU unit in the center of the disc using the TR+ & TR- keys.
- 3.Close focus by pressing key 3.
- 4.Observing the TEY waveform on the oscilloscope, adjust VR1002 until the positive and negative halves have the same amplitude (see waveform 7-9).

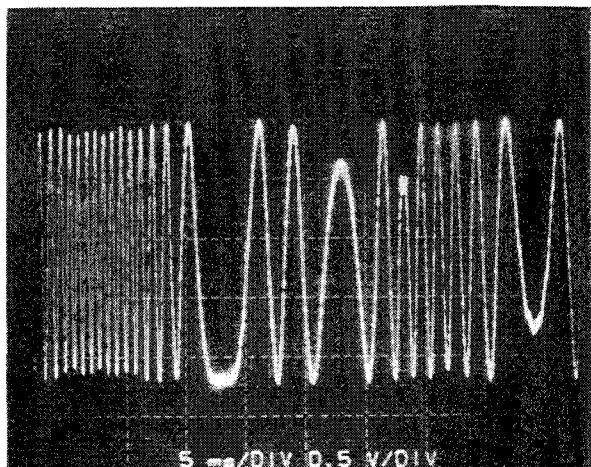
Check

After adjustment the TEY waveform should have an amplitude of 1.5 ± 0.65 Vpp (ABEX-784)
(Providing focus bias is OK)

+5% NG

 $\pm 0\%$ OK

-5% NG



5 Focus Bias Adjustment

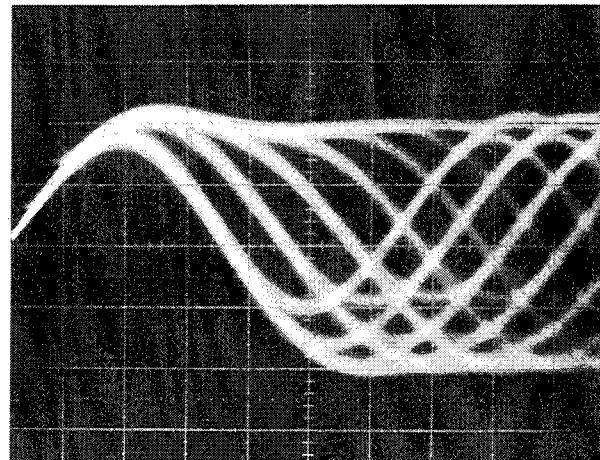
Purpose :

To adjust the focus servo reference so that the RF waveform is an optimum.

Symptoms of Mal-adjustment :

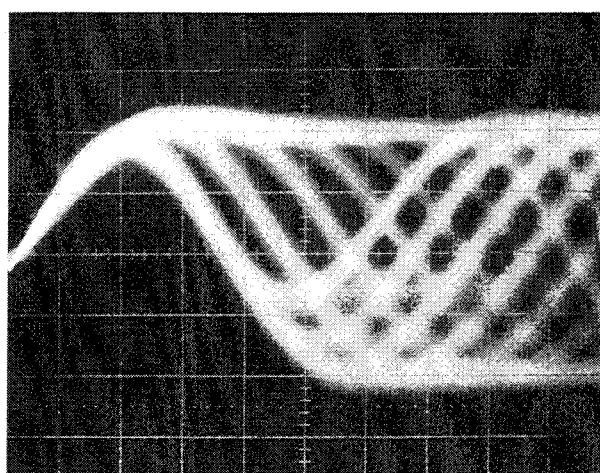
Difficulty in closing focus, poor playability.

• Measuring Equipment / Jig	• Oscilloscope
• Measuring Point	• RFO
• Test Disc , Mode	• ABEX TCD-784; NORMAL MODE
• Adjustment Point	• VR1003 (FE BIAS VR)



OK

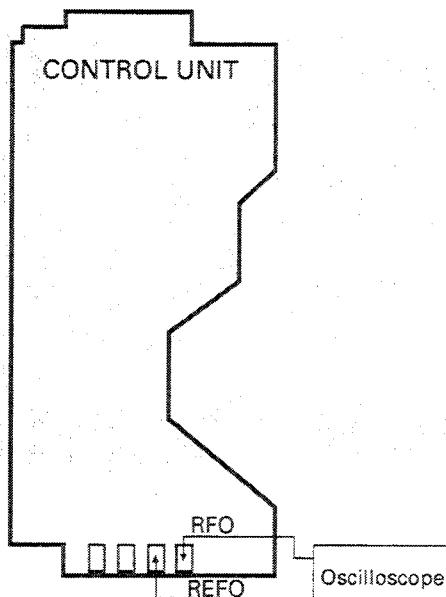
Waveform 10



NG

AC Mode Before adjustment

Waveform 11



Adjustment Procedure

- 1) Play track number 18.
- 2) Adjust VR1003 so that the RFO waveform amplitude is a maximum and eye pattern is optimum.

Check

- After adjustment the RFO waveform should have an amplitude of 1.7 ± 0.65 Vpp (ABEX-784)

6 RFO Offset Adjustment

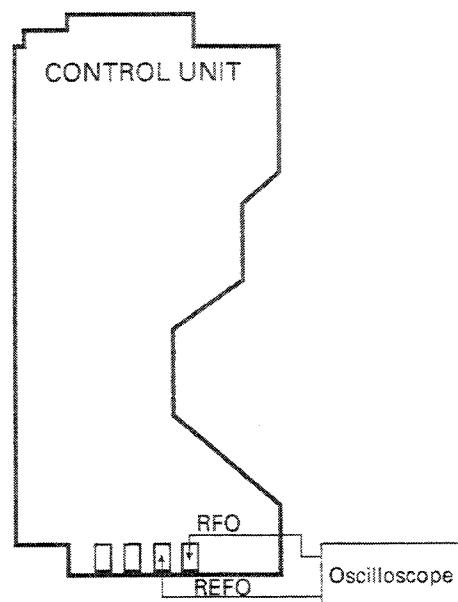
Purpose

To adjust the RFO waveform offset to an optimum.

Symptoms of Mal-adjustment

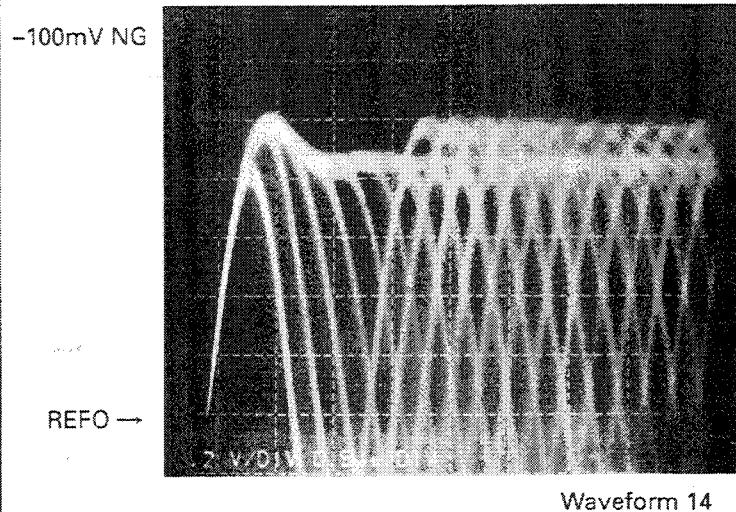
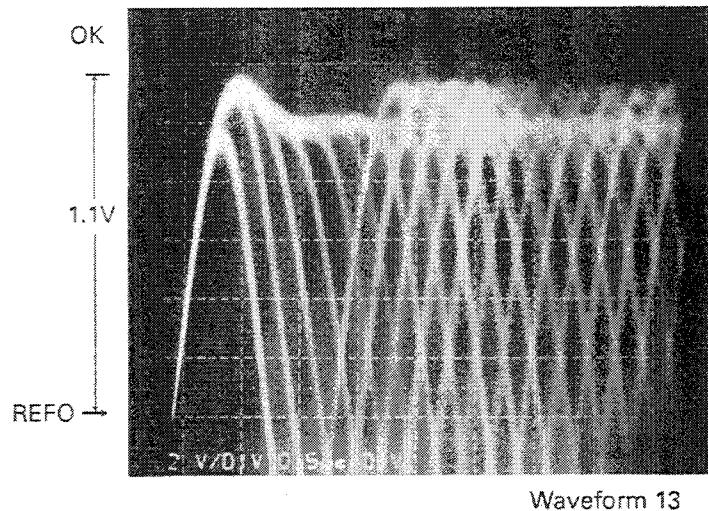
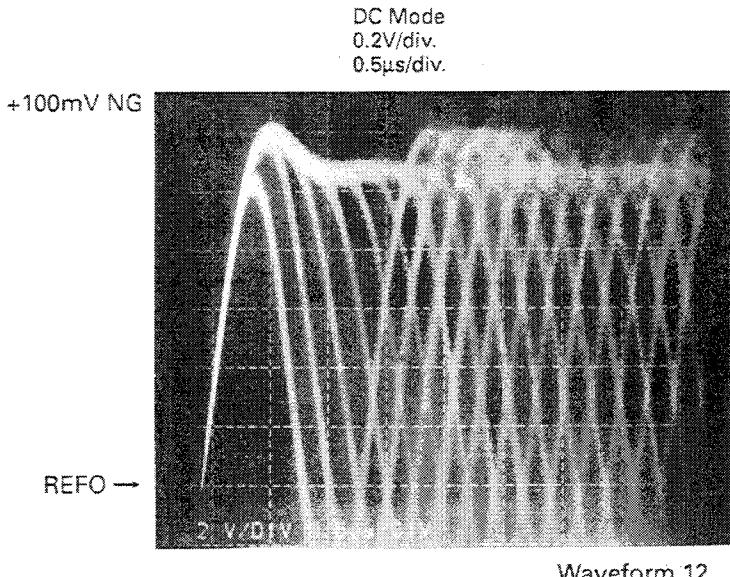
Difficulty in closing focus, poor playability.

· Measuring Equipment / Jig	· Oscilloscope
· Measuring Point	· RFO
· Test Disc , Mode	· ABEX TCD-784, NORMAL MODE
· Adjustment Point	· VR1004 (RFO OFFSET VR)



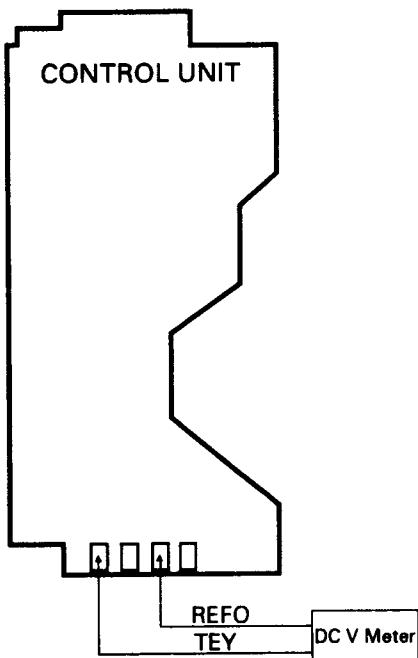
Adjustment Procedure

- 1) Play track number 18.
- 2) Adjust VR1004 so that the peak value of the upper envelope of the RFO waveform is at +1.1VDC w.r.t. REFO.(See waveform 12-14)



7 Tracking Error Offset Adjustment 2

Purpose :	To check the offset of the tracking pre-amp is zero and adjust if necessary.
Symptoms of Mal-adjustment :	Track search NG, Carriage runaway, Poor playability
Measuring Equipment / Jig	·DC V Meter
Measuring Point	·TEY
Test Disc , Mode	·No disc, TEST MODE
Adjustment Point	·VR1001(TE OFFSET VR)

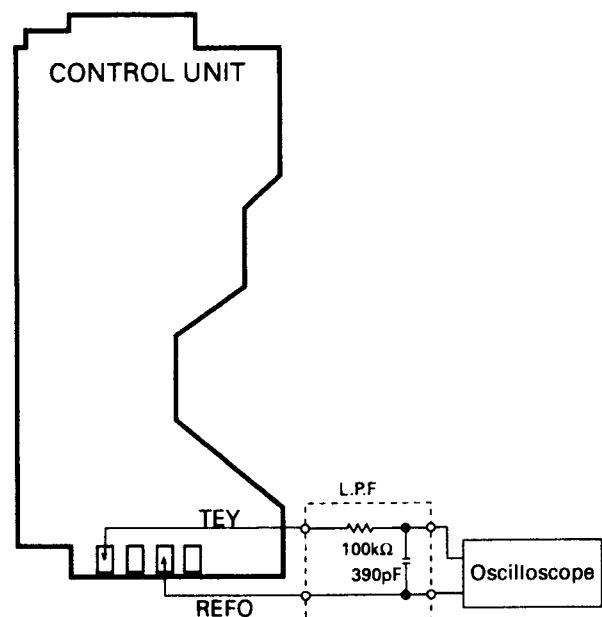


Adjustment Procedure

- 1.Switch the regulator on.
- 2.Using VR1001, adjust TEY to $0 \pm 25\text{mV}$ w.r.t. REFO.

8 Tracking Balance Adjustment 2

Purpose :	To equate the sensitivity of the F channel to that of the E channel. This needs only be done if the TE OFFSET volume was re-adjusted in the previous step
Symptoms of Mal-adjustment:	Track search NG,Poor playability, carriage runaway
Measuring Equipment / Jig	·Oscilloscope, L.P.F.
Measuring Point	·TEY
Test Disc , Mode	·ABEX TCD-784, TEST MODE
Adjustment Point	·VR1002 (T.BAL VR)



Adjustment Procedure

- 1.Load Disc and switch the regulator on.
- 2.Position the PU unit in the center of the disc using the TR+ & TR- keys.
- 3.Close focus by pressing key 3.
- 4.Observing the TEY waveform on the oscilloscope, adjust VR1002 until the positive and negative halves have the same amplitude (See waveform 7-9).

Check

After adjustment the TEY waveform should have an amplitude of $1.5 \pm 0.65 \text{ Vpp}$ (ABEX-784)

4.2 TUNER SECTION

● Connection Diagram

NOTE:

Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.

Z: Output impedance of SSG.

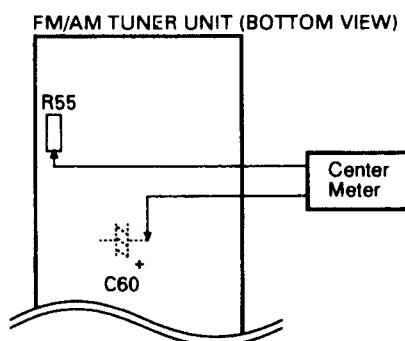
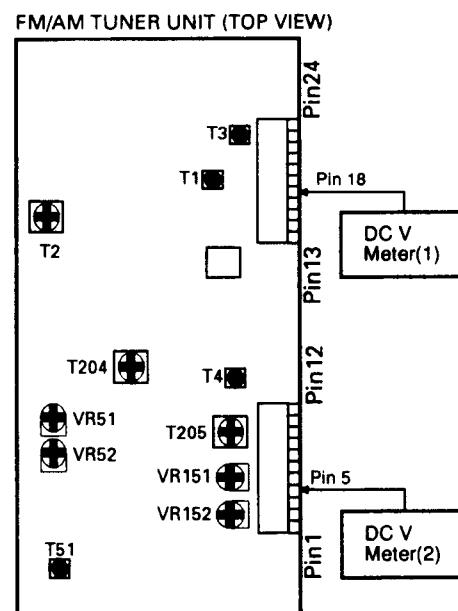
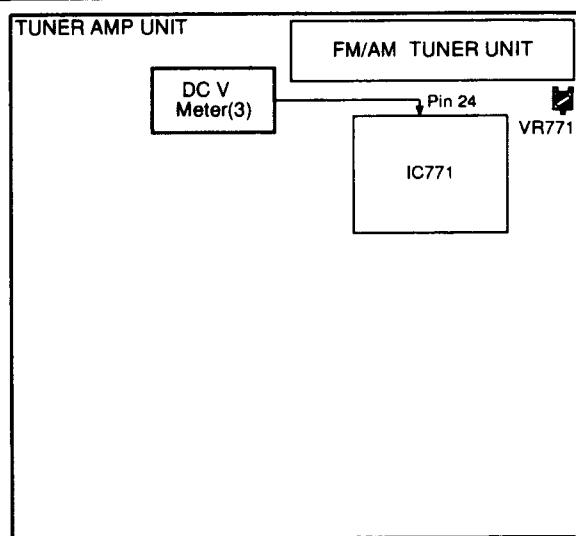
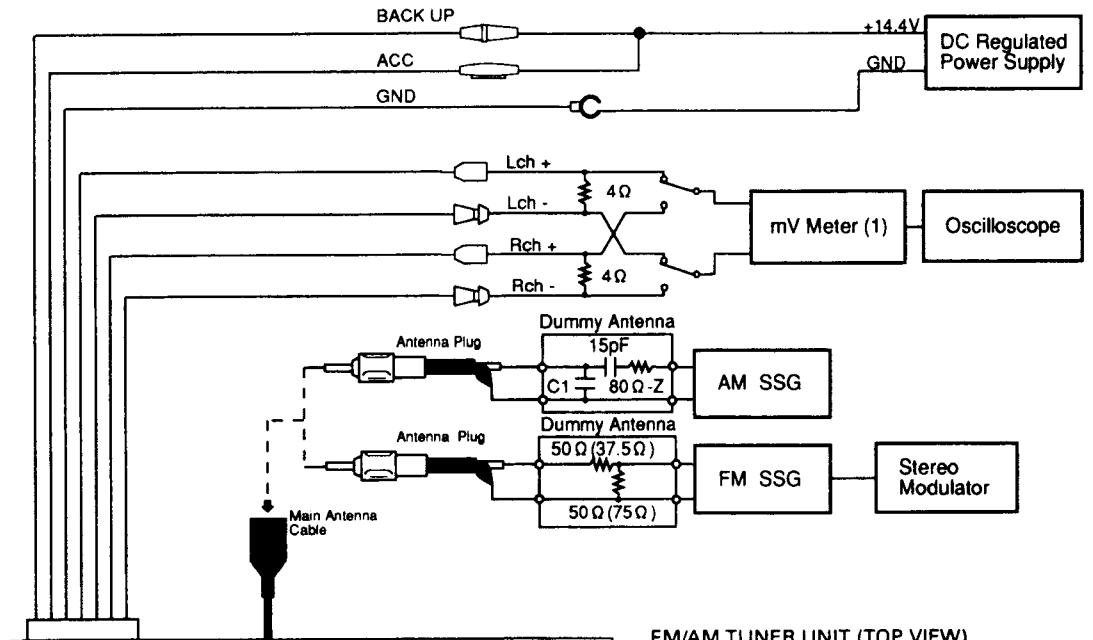


Fig.10

MW/LW ADJUSTMENT

	No.	AM SSG(400Hz,30%)		Displayed Frequency(kHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(kHz)	Level(dB μ V)			
IF	1	999	20	999	T204,T205,	mV Meter(1) : Maximum

FM ADJUSTMENT

Modulation M:MONO MOD., 400Hz 100%(75kHz Dev.)
 S:STEREO MOD., 1kHz, L or R=90%, Pilot=10%(67.5kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)	
		Frequency(MHz)	Level(dBf)				
TUN Volt	1	108.0	M	65	108.0	T4	DC V Meter(1) : 6.5V±0.1V
IF	1	98.1	M	65	98.1	T51	Center Meter:0
ANT,RF	1	98.1	M	10	98.1	T1,T3	mV Meter(1) : Maximum
IFT	1	98.1	M	10	98.1	T2	mV Meter(1) : Maximum (STEREO MODE)
Soft Mute	1	98.1	M	65	98.1		mV Meter(1) : A (STEREO MODE)
	2	98.1	M	15	98.1	VR52	mV Meter(1) : A-3dB
MPX	1	98.1	S	65	98.1	VR152	mV Meter(1) : Separation Maximum
ARC	1	98.1	S	40	98.1	VR151	mV Meter(1) : Separation 5dB
SD	1	98.1	S	22	98.1	VR51	DC V Meter(2) : Approx. 5V (SEEK:ON)

FM SL ADJUSTMENT(DEH-605RDS)

Modulation MONO MOD., 400Hz 100%(75kHz Dev.)

No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
	Frequency(MHz)	Level(dBf)			
1	106.1	52	106.1	VR771	DC V Meter(3) : 2.25V±0.05V

5. ERROR NUMBERS AND NEW TEST MODE

● Error Number Indication

If the CD should fail to operate or if an error has taken place during operation the player will enter into the error mode, and the cause of the error will be numerically indicated.

This is aimed at assisting in analysis or repair.

(1) Basic Means of Display

- With ERROR indicated in "MODE" on IP-BUS Display date, an error code is transmitted by the use of MIN and SEC.
The MIN and SEC data will be identical.
- Examples of Display E-XX

(2) Error Codes

Error Code	Classification	Description	Cause/Detail
10	ELECTRIC	Carriage home failure	Carriage doesn't move to or from the innermost position →Home switch failed and/or carriage immobile
11	ELECTRIC	Focus failure	Focus failed →Defects, disc upside-down, severe vibration
12	ELECTRIC	SETUP failure Subcode failure	Spindle failed to lock or subcode unreadable →Spindle defective, defect, severe vibration
14	ELECTRIC	Mirror failure	Unrecorded CD-R The disc is upside-down, defects, vibration
17	ELECTRIC	Set up failure	AGC protect failed →Defects, disc upside-down, severe vibration
30	ELECTRIC	Search time out	Failed to reach target address →Carriage/tracking defective and/or defects
A0	SYSTEM	Power failure	Power overvoltage or short circuit detected →Switching transistor defective and/or power abnormal

"defects" means scratches, dirt etc an the surface of the disc.

● New Test Mode(aging operation and setup analysis)

The single CD player plays in normal mode. After being set up, it will display FOK (focus), LOCK (spindle), subcode, sound skip, protection against a mechanical error or the like, occurrence of an error, cause and time of an expiry, if any, (and disk number)

During the setup, the CD software operation status (internal RAM and C-point) is displayed.

(1) How to enter NEW TEST Mode

See the test mode flow chart Page 1-24.

(2) Relations of keys between TEST and NEW TEST Modes

Keys	Test Mode		New Test Mode	
	Regulator OFF	Regulator ON	PLAY in progress	Error Occurred, Protection Activated
BAND/REL	Regulator ON	Regulator OFF	—	Time of occurrence/ cause of error select
TR+	—	FWD-Kick	TR+	—
TR-	—	REV-Kick	TR-	—
1	—	Tracking close	PAUSE	—
2	—	Tracking open	REPEAT	—
3	—	Focus close	RANDOM	—
TR+ & TR-	To New Test Mode	Focus Mode Select	AUTO/MANU	TRACK No./ time of occurrence select

Operations, such as EJECT, CD ON/OFF, etc. are performed normally

(3) Error Cause (Error Number) Code

Error Code	Classification	Mode	Description	Cause/Detail
40	ELECTRIC	PLAY	FOK=L	Put out of focus Scratch,
41	ELECTRIC	PLAY	LOCK=L 150ms	Spindle unlock Stain, Vibration,
42	ELECTRIC	PLAY	Subcode unacceptable 500ms	Failed to read subcode Servo defect, etc...
43	ELECTRIC	PLAY	Sound skipped	Last address memory operated

(4) Indicating an Operation Status During Setup

Status No.	Description	Protection operation
01	Carriage home mode started	None
02	Carriage moving inwards	10-second time out, Home switch failed
03	Carriage moving outwards	10-second time out, Home switch failed
05	Carriage moving outwards	None
11	Setup started	None
12	Spindle turn/Focus search started	None
13	Waiting for focus closure (XSI=L)	Failure to close focus
10,14	Waiting for focus closure (FOK=H)	Failure to close focus
15,16,17	Focus closed, Tracking open	Focus disrupted
18	During focus AGC Subcode waiting	Focus disrupted
19	During tracking AGC	Disrupted focus
20	Waiting for MIRR, LOCK or subcode read Carriage closed, SPINDLE=ADAPTIVE	Focus disrupted, MIRR NG, Failure to lock, failed to read subcode

(5) Example of Display.

·SET UP in progress

8 digits

4 digits(Auto)

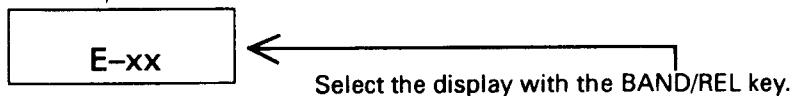
4 digits(Manual)

TNo.	Min	Sec	TNo.	Min	Sec
11	11	11	11	11	11

·Operation (PLAY, SEARCH, etc.) in progress perfectly identical with that in the normal mode.

·Protection/Error upon occurrence(4 digits display)

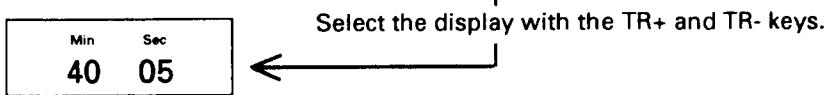
(a) Error number indicated



(b) Track number indicated

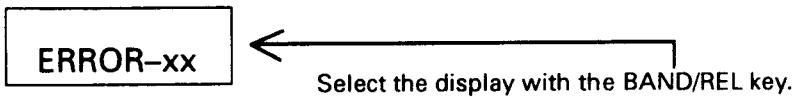


(c) Absolute time indicated



·Protection/Error upon occurrence(8 digits display)

(a) Error number indicated

(b) Track number and
absolute time indicated

6. EXPLODED VIEW PARTS LIST

● Chassis(Exploded View:Page 2-9)

NOTES:

- Parts marked by “*” are generally unavailable because they are not in our Master Spare Parts List.
- Parts marked by “◎” are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

● Parts List(DEH-605RDS)

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
1	Screw	BSZ26P050FMC		42	FM/AM Tuner Unit	CWE1313	
2	Screw	BSZ26P080FMC		43	Antenna Jack	CKX1043	
3	Screw	PSS26P060FZK		44	Holder	CNC4880	
4	Screw	BSZ30P060FMC		45	Detach Grille Assy	CXA5860	
5	Screw	BSZ30P120FMC		46	Screw	BUZ20P100FZK	
6	Cord Assy	CDE4142		47	Button	CAC4040	
7	Cap	CNS1472		48	Button	CAC4041	
8	Resistor	RS1/2P102JL		49	Button	CAC4042	
9	Screw	CBA1284		50	Button	CAC3741	
10	Handle	CNC4947		51	Button	CAC3742	
11	Bush	CNV1009		52	Button	CAC4039	
12	Case	CNB1817		53	Button	CAC3744	
13	Holder	CNC3850		54	Grille	CNS2817	
14	Holder	CNC4946		55	Cover	CNS2818	
15	Insulator	CNM3726		56	Key Board Unit	CWX1661	
16	P.C.Board	CNP3534		57	LCD	CAW1228	
17	Case	CNS2269		58	Holder	CNC5009	
18	Cushion	CNM3074		59	Lens	CNV3671	
19	Cap	CNV2680		60	Rubber	CNV3672	
20	Holder	CNV3620		61	Connector	CNV3673	
21	Chassis Unit	CXA5925		62	Rubber	CNV3675	
22	CD Mechanism Module	CXK2810		63	Spacer	CNM4042	
23	Tuner Amp Unit	CWX1648		64	Plug	CKS2402	
24	Screw	BSZ26P120FMC		65	Panel Assy	CXA5875	
25	Cord	CDE4136		66	Screw	BPZ20P060FMC	
26	Antenna Cable	CDH1146		67	Spring	CBH1484	
27	Plug(CN951)	CKM1139		68	Socket	CKS2782	
28	Plug(CN851)	CKS1238		69	Holder	CNC4943	
29	Connector(CN601)	CKS1529		70	Holder	CNC4944	
30	Connector(CN651)	CKS1546		71	P.C.Board	CNP3532	
31	Holder	CNC4881		72	Arm	CNV3696	
32	Holder	CNC4882		73	Arm	CNV3697	
33	Bracket	CNC4940		74	Panel Unit	CXA5913	
34	Holder	CNC5013		75	Screw	PMS20P030FZK	
35	Bracket	CNC5015		76	Detach Mechanism Unit	CXA5188	
36	Insulator	CNM3825		77	Washer	CBF1039	
37	Heat Sink	CNR1307		78	Spring	CBH1484	
38	Spacer	CNM3343		79	Arm	CNV3292	
39	IC(IC551)	PA3029A		80	Arm	CNV3293	
40	Screw	BSZ30P060FMC		81	Holder Unit	CXA5124	
41	Bracket	CNC5014		82	IC(IC971)	PA2023A	
				83-90	.....	

- The DEH-505SDK, DEH-505, DEH-405SDK and DEH-405 Parts Lists enumerate the parts which differ from those enumerated in the DEH-605RDS Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The DEH-605RDS Parts List is given on page 1-38.

Mark No.	Description	DEH-605RDS	DEH-505SDK	DEH-505	DEH-405SDK	DEH-405
6	Cord Assy	CDE4142	CDE4141	CDE4142	CDE4141	CDE4142
19	Cap	CNV2680	.....	.....	CNV2680	CNV2680
21	Chassis Unit	CXA5925	CXA5933	CXA5934	CXA5935	CXA5934
23	Tuner Amp Unit	CWX1648	CWX1649	CWX1651	CWX1650	CWX1652
25	Cord	CDE4136	.....	.....	CDE4136	CDE4136
28	Plug(CN851)	CKS1238	.....	.....	CKS1238	CKS1238
29	Connector(CN601)	CKS1529	CKS1534	CKS1534	CKS1534	CKS1534
31	Holder	CNC4881	CNC4881	.....	CNC4881	.....
32	Holder	CNC4882	CNC4882	.....	CNC4882	.....
35	Bracket	CNC5015	CNC5016	CNC5016	CNC5015	CNC5015
36	Insulator	CNM3825	CNM3825	.....	CNM3825	.....
42	FM/AM Tuner Unit	CWE1313	CWE1311	CWE1311	CWE1311	CWE1311
45	Detach Grille Assy	CXA5860	CXA5861	CXA5866	CXA5865	CXA5867
52	Button	CAC4039	.....	.....	.....	.....
54	Grille	CNS2817	.....	.....	CNS2835	CNS2837
	Grille Unit	.....	CXA5921	CXA5922	.....	.....
56	Key Board Unit	CWX1661	CWX1662	CWX1662	CWX1664	CWX1664
57	LCD	CAW1228	CAW1229	CAW1229	CAW1229	CAW1229
58	Holder	CNC5009	CNC5010	CNC5010	CNC5010	CNC5010
65	Panel Assy	CXA5875	CXA5876	CXA5876	CXA5876	CXA5876
68	Socket	CKS2782	CKS2783	CKS2783	CKS2783	CKS2783
71	P.C.Board	CNP3532	CNP3526	CNP3526	CNP3526	CNP3526
83	Plug(CN851)	.....	CKS1242	CKS1242	.....	.....
84	Cord	.....	CDE4138	CDE4138	.....	.....
85	Cap	.....	CNV2680	CNV2680	.....	.....
86	Spacer	.....	CNM4027	CNM4027	.....	.....
87	Remote Control Assy	.....	CXA6155	CXA6155	.....	.....
88	Battery Cover	.....	CNS2850	CNS2850	.....	.....
89	IC(IC922)	.....	RPM-678CBR	RPM-678CBR	.....	.....
90	Spacer	.....	CNM3882	.....	CNM3882	.....

● CD Mechanism Module(Exploded View:Page 2-11)

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	PMS26P040FMC	11	Screw	CBA1077
2	Control Unit	CWX1641	12	Screw	CBA1230
3	Connector(CN1001)	CKS1955	13	Screw	CBA1296
4	Connector(CN1701)	CKS2775	14	Washer	CBF1038
5	Connector(CN1002)	CKS2811	15	Washer	CBF1060
6	Connector(CN1801)	CKS2196	16	Spring	CBH1415
7	CD Mechanism Unit	CXA6475	17	Spring	CBH1417
8	Screw	BMZ20P030FMC	18	Spring	CBH1418
9	Screw	BSZ20P040FMC	19	Spring	CBH1421
10	Screw	CBA1041	20	Spring	CBH1423

Mark No.	Description	Part No.	Mark No.	Description	Part No.
21	Spring	CBH1457	66	Gear	CNV3569
22	Spring	CBH1552	67	Gear	CNV3570
23	Spring	CBH1553	68	Arm	CNV3571
24	Spring	CBH1554	69	Holder	CNV3572
25	Spring	CBH1555	70	Gear	CNV3573
26	Spring	CBH1556	71	Holder	CNV3574
27	Spring	CBH1557	72	Holder	CNV3575
28	Spring	CBH1558	73	Holder	CNV3576
29	Spring	CBH1559	74	Rack	CNV3577
30	Spring	CBH1560	75	Arm	CNV3578
31	Spring	CBH1576	76	Plate	CNV3629
32	Spring	CBH1577	77	Guide	CNV3694
33	Spring	CBH1578	78	P.C.Board	CNP3418
34	Spring	CBH1583	79	P.C.Board	CNP3666
35	Spring	CBH1628	80	Screw Unit	CXA2375
36	Spring	CBL1170	81	Motor Unit	CXA4649
37	Spring	CBL1171	82	Chassis Unit	CXA5602
38	Spring	CBL1172	83	Arm Unit	CXA5603
39	Connector	CDE4147	84	Arm Unit	CXA5604
40	PU Unit	CGY1031	85	Bracket Unit	CXA5605
41	Shaft	CLA2220	86	Lever Unit	CXA5606
42	Roller	CLA2255	87	Arm Unit	CXA5607
43	Shaft	CLA2256	88	Arm Unit	CXA5608
44	Frame	CNC4888	89	Gear Unit	CXA5609
45	Arm	CNC4889	90	Motor Unit	CXA5703
46	Lever	CNC4891	91	Bracket Unit	CXA5938
47	Lever	CNC4892	92	Frame Unit	CXA6192
48	Bracket	CNC4893	93	Motor Unit	CXA6456
49	Arm	CNC4895	94	Screw	JFZ17P035FNI
50	Arm	CNC4898	95	Screw	JFZ20P014FMC
51	Bracket	CNC5424	96	Screw	JFZ20P020FZK
52	Spacer	CNM3315	97	Screw	JFZ20P025FMC
53	Sheet	CNM4066	98	Photo-transistor	PT4800
54	Sheet	CNM3693	99	Washer	YE15FUC
55	Bracket	CNM3917	100	Washer	YE20FUC
56	Belt	CNT1053	101	Spacer	CNM3999
57	Clamper Unit	CXA6552	102	Sheet	CNM4028
58	Guide	CNV2891	103	Holder	CNV3805
59	Holder	CNV3276	104	Spacer	CNC5436
* 60	Roller	CNV3412	105	Screw	JFZ20P045FMC
61	Damper	CNV3720			
62	Arm	CNV3565			
63	Arm	CNV3566			
64	Gear	CNV3567			
65	Gear	CNV3568			

7. ELECTRICAL PARTS LIST

NOTE:

● Parts whose parts numbers are omitted are subject to being not supplied.

● The part numbers shown below indicate chip components.

Chip Resistor

RS1/OS000J, RS1/OOS000J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

=====Circuit Symbol & No. Part Name=====			Part No.	=====Circuit Symbol & No. Part Name=====	Part No.
Unit Number : CWE1313(DEH-605RDS) CWE1311(DEH-505SDK, 505, 405SDK, 405)					
Unit Name : FM/AM Tuner Unit					
MISCELLANEOUS					
RESISTORS					
IC 1		PA2021B	R 1		RS1/16S223J
IC 2		PA2022A	R 2		RS1/16S271J
Q 1		3SK195	R 3 10 16 18 20		RS1/16S223J
Q 2 202		2SC2712	R 4 5		RS1/16S0R0J
Q 3		DTC124EU	R 6		RS1/16S680J
Q 51		DTC124TU	R 7 14		RS1/16S563J
Q 52		2SC4207	R 8		RS1/16S152J
Q 53		2SA1586	R 9		RS1/16S473J
Q 201		2SK435	R 11		RS1/16S474J
D 1		1SV172	R 12		RS1/16S123J
D 2 3 4		KV1410			
D 5		MA151WK-MT	R 13 15 217		RS1/16S563J
D 6 151 201 202		MA157-MR	R 17 206		RS1/16S102J
D 203		SVC203CP	R 21 22		RS1/16S580J
L 1	Inductor	LCTBR12K2125	R 51 74		RS1/16S391J
L 2 52	Ferri-Inductor	LAU150K	R 52		RS1/16S152J
L 51	Ferri-Inductor	LAU2R2K			
L 201	Ferri-Inductor	LAU4R7K	R 53		RS1/16S751J
L 202	Coil 1mH	CTF1026	R 55 157		RS1/16S682J
L 203	Inductor	LAU390K	R 56		RS1/16S332J
L 204	Ferri-Inductor	LAU680K	R 58 73 203		RS1/16S102J
L 205	Ferri-Inductor	LAU330K	R 60		RS1/16S123J
L 206	Inductor	CTF1198			
T 1	Coil	CTC1078	R 72		RS1/16S391J
T 2	Coil	CTE1077	R 101		RS1/16S224J
T 3	Coil	CTC1077	R 102 222		RS1/16S822J
T 4	Coil	CTC1079	R 103		RS1/16S223J
T 51	Coil	CTC1081	R 104		RS1/16S822J
T 202	Coil	CTB1102	R 151 152		RS1/16S272J
T 203	Coil	CTE1076	R 153		RS1/16S103J
T 204	Coil	CTC1077	R 154 155 202		RS1/16S103J
T 205	Coil	CTE1074	R 156		RS1/16S153J
AR 1	Capacitor with Discharge Gap	CTE1075	R 158		RS1/16S183J
CF 1 51	52(DEH-605RDS)	DSP-201M	R 159 216		RS1/16S103J
CF 1 51	52(DEH-505SDK, 505, 405SDK, 405)	CTF1292	R 204 213		RS1/16S222J
CF 201	Ceramic Filter	CTF1290	R 205		RS1/16S823J
CF 202	Ceramic Filter		R 207		RS1/16S225J
X 151	Ceramic Resonator	CTF1291	R 208		RS1/16S752J
X 201	Crystal Resonator	CTF1300			
VR 51	Semi-fixed 47kΩ(B)	CSS1308	R 209		RS1/16S822J
VR 52	Semi-fixed 68kΩ(B)	CSS1111	R 214		RS1/16S333J
VR 151	Semi-fixed 10kΩ(B)	CCP1210	R 215		RS1/16S330J
VR 152	Semi-fixed 22kΩ(B)	CCP1211	R 218		RS1/16S333J
			R 220		RS1/16S100J
			R 221		RS1/16S473J
CAPACITORS					
VR 52	Semi-fixed 68kΩ(B)	CCP1206	C 1 54		CCSRCH220J50
VR 151	Semi-fixed 10kΩ(B)	CCP1208	C 2		CCSRCH390J50
VR 152	Semi-fixed 22kΩ(B)		C 3 102 154 163 203 210		CKSQYB473K16
			C 4 12		CCSRCH070D50
			C 5 53		CCSRCH270J50

DEH-605RDS, 505SDK, 505, 405SDK, 405

=====Circuit Symbol & No. Part Name=====			Part No.	=====Circuit Symbol & No. Part Name=====			Part No.
C 6			CKSRYB222K50	Q 453	454	455	456
C 7			CCSRCH040C50	Q 457			DTC314TK
C 8 105			CKSRYB222K50	Q 501			2SA1162
C 9 16			CCSRCH470J50	Q 503			2SC3295
C 10			CCSRCH090D50	Q 505	509		2SC3098
C 11			CKSRYB223K25	Q 551	601	604	606
C 13			CCSRCH070D50	Q 602	863	982	2SK208
C 14			CKSRYB103K50	Q 603	605	607	DTC114EK
C 15 22 55 101 151 164 219 220 225 227			CKSQYB104K25	Q 772			DTA114EK
C 17			CCSRCH100D50	Q 861	862		2SB1238
C 18			CCSRCH080D50	Q 981			DTC124EK
C 19 20 21 52 62 71 74 201 207 209			CKSRYB103K50	D 501	971		2SD2396
C 23			CEA3R3M50LL	D 504	505		MA151WK-MT
C 24 29 73 106 213			CKSRYB223K25	D 771	972	973	MA3027H
C 25			CKSRYB682K50	D 772			1SS133
C 26 28 231			CEA101M16LL	D 861			MTZ4R7B
C 51 223			CKSRYB103K50	D 951	952	957	MA151WA-MN
C 56 162 211			CEA010M50LL	D 956			ERA15-02VH
C 57 64 66 237			CCSRCH101J50	D 981			ERA15-10VH
C 58			CKSRYB153K25	D 984			RB100AVH
C 60			CEAR47M50LL	L 501			HZS9LC3
C 61			CEAR22M50LL	L 502			CTF-157
C 63			CKSQYB104K25	L 601	602	603	LAU220K
C 65			CEA0R1M50LL	TH 601			LAU470K
C 103			CKSQYB222K50	IB 551	552		CCX1008
C 104			CEA4R7M35LL	IB 601			CWW1338
C 152 153			CKSRYB223K25	IB 602			CWW1336
C 155			CEAR47M50LL	X 501			CWW1337
C 156			CKSQYB563K16	X 601			CSS1011
C 158 212			CEA100M16LL	VR 771			CSS1023
C 159			CCSRCH331J50	BZ 601			Semi-fixed 2.2kΩ (B)
C 160			CKSYB105K16	TUN501			VRMB6VS222
C 161			CKSQYB104K25				CPV1011
C 202			CKSRYB332K50				CWE1313
C 204			CCSRCH120J50				RESISTORS
C 205			CCSRCH560J50	R 451	452	514	515
C 206 221			CCSRCH680J50	R 453	454		RS1/10S473J
C 208			CEA470M16LL	R 455	456	457	RS1/10S0R0J
C 214 230			CKSRYB472K50	R 459	460	505	RS1/10S102J
C 215 228			CKSRYB103K50	R 467	468	488	RS1/10S223J
C 216			CCSRCH100D50	R 471	472		RS1/10S103J
C 217			CCSRCH221J50	R 473	474		RS1/10S272J
C 218 234			CEA220M16LL	R 475	476		RS1/10S273J
C 222			CCSRCH150J50	R 477	478		RS1/10S331J
C 224			CCSRCH181J50	R 481	482		RS1/10S272J
C 226			CEA4R7M35LL	R 485	486	487	RD1/4PS472JL
C 229			CEAR68M50LL	R 492	493	494	RS1/10S103J
C 232			CCSRCH390J50	R 503	508	509	RS1/10S472J
C 233			CKSRYB332K50	R 504	511	513	RS1/10S222J
C 235			CKSQYB104K25	R 506			RS1/10S221J
C 236			CKSRYB223K25	R 510			RS1/10S123J
				R 517	518	519	RD1/4PS222JL
				R 523			RS1/10S633J
				R 524	784		RS1/10S101J
				R 525	782		RS1/10S332J
Unit Number : CWX1648(DEH-605RDS)				R 526			RS1/10S331J
Unit Name : Tuner Amp Unit				R 527			RS1/10S821J
MISCELLANEOUS				R 528			RS1/10S680J
IC 471			NJM4558L	R 531			RS1/8S103J
IC 481			LC7538JHHS	R 532	781		RS1/10S152J
IC 482 483			NJM4558MD				
IC 501			LC72140M	R 539	540	541	RS1/10S102J
IC 551			PA3029A	R 542			RS1/10S822J
IC 601			PD4483B	R 545	546		RS1/8S0R0J
IC 771			CWV1044	R 548			RS1/10S330J
IC 961			PAJ001A	R 549			RD1/4PS102JL
IC 971			PA2023A				
Q 451 452 502 504 508 771 773			2SC2712				

DEH-605RDS, 505SDK, 505, 405SDK, 405

=====Circuit Symbol & No. Part Name=====		Part No.	=====Circuit Symbol & No. Part Name=====		Part No.
R 555 556		RS1/10S2R2J	C 612 613		CKSQYB102K50
R 557		RD1/4PS102JL	C 771		CEAR47M50LL
R 558 559 560 561 562 563 564 565		RD1/4PS2R2JL	C 773 862		CEA100M16LL
R 570		RD1/4PS752JL	C 863 864		CCSQCH221J50
R 571		RS1/10S560J	C 962		CEAR22M50LL
R 573		RS1/10S682J	C 964		CEA2R2M50LL
R 617		RS1/8S473J	C 965		CEA220M6R3LL
R 620 963		RS1/10S683J	C 971		CEA010M50LL
R 621 634 772 773 774 775 776 777 778		RS1/10S473J	C 972		CEAS470M10
R 622 624		RD1/4PS222JL	C 973		CEAS101M10
R 623 625 971		RS1/10S104J	C 974		CEAS221M10
R 626		RS1/10S183J	C 975	330 μ F/10V	CCH1181
R 627 629 632 957 973 984		RS1/10S472J	C 981		CEAS331M16
R 628 630 958		RD1/4PS272JL			
R 633		RD1/4PS472JL			
R 645 646 647		RS1/10S472J		Unit Number : CWX1641	
R 648		RS1/10S682J		Unit Name : Control Unit	
R 651		RD1/4PS102JL		MISCELLANEOUS	
R 653 654 655 656		RS1/10S681J			
R 660 662 663 664 780 783 972		RS1/10S102J	IC 1001		UPC2571GS
R 670 671 672		RD1/4PS472JL	IC 1201		UPD63700GF
R 673		RD1/4PS103JL	IC 1301		PA3026
R 771		RS1/10S471J	IC 1302		XRA6285FP
R 861 862		RD1/4PS821JL	IC 1303		NJM4558M
R 864		RS1/8S222J	IC 1601		TC9268F
R 951		RS1/10S0R0J	IC 1602		TA2063F
R 959		RD1/4PS513JL	IC 1701		PQ05TZ61
R 961		RS1/8S823J	Q 1001		2SB1260
R 962		RS1/10S363J	Q 1601 1602		2SD1781K
R 964		RD1/4PS473JL	Q 1603		2SB709A
R 965		RD1/4PS273JL	D 1601		MA151WA-MN
R 966		RS1/10S103J	D 1701 1702 1703 1704		SC016-2
R 981		RD1/4PS471JL	D 1801 1802	Chip LED	CL200IRX
R 982		RD1/4PS221JL	L 1601	Inductor	LCTBR39K2125
R 983		RS1/10S392J	X 1601	Crystal Resonator	CSS1067
CAPACITORS			S 1801 1802	Switch(Home,Clamp)	CSN1028
C 451 452		CEAS4R7M25	VR1001	Semi-fixed 2.2k Ω (B)	CCP1177
C 471 472 481 482 861		CEAS100M16	VR1002	Semi-fixed 22k Ω (B)	CCP1183
C 473 474		CCSQCH560J50	VR1003 1004	Semi-fixed 47k Ω (B)	CCP1185
C 475 951 963	1000 μ F/16V	CCH1149			
C 476 477		CKSQYB393K25	R 1001		RS1/8S100J
C 483 484 485 486 491 492 553 567 568 569		CEA100M16LL	R 1002		RS1/8S120J
C 487 488		CKSYB224K16	R 1003 1201 1307 1309		RS1/16S103J
C 489 490		CKSQYB272K50	R 1004 1013 1024 1025 1311 1315 1318 1708		RS1/16S102J
C 493 494 506 507		CKSQYB223K25	R 1005		RS1/16S823J
C 495 496		CKSQYB562K50	R 1006		RS1/16S182J
C 497 498 499 500		CCSQCH330J50	R 1007		RS1/16S333J
C 501 505 509 512 517		CCSQCH101J50	R 1011 1012		RS1/16S683J
C 502 607 982		CKSQYB473K25	R 1014 1015 1310		RS1/16S473J
C 504 510 514 523 772 952 954		CKSQYB103K25	R 1018		RS1/16S622J
C 511		CCSQCH681J50	R 1019		RS1/16S563J
C 513	0.047 μ F	CCG1008	R 1020		RS1/16S622J
C 515		CFTNA474J50	R 1021		RS1/16S513J
C 516		CEA4R7M35LL	R 1022		RS1/16S133J
C 518 519		CCSQCH120J50	R 1027		RS1/16S183J
C 520	4.7 μ F/16V	CCH1165	R 1028		RS1/16S822J
C 551 552 554 555 606		CKSQYB102K50	R 1301 1302		RS1/16S222J
C 556	3300 μ F/16V	CCH1150	R 1304		RS1/16S223J
C 557 558 601 609 956		CKSQYB104K25	R 1305 1306 1705		RS1/16S123J
C 559 560 561 562 563 564 565 566		CQMA104J50			RS1/16S332J
C 570 608		CEA100M16LL	R 1308		RS1/16S163J
C 571 572 573 574		CCSQCH220J50	R 1314		RS1/16S0R0J
C 575		CEAS4R7M25	R 1317		RS1/16S473J
C 603		CKSQYB104K25	R 1601		RS1/16S301J
C 604 605		CCSQCH150J50	R 1604 1605		RS1/16S102J
C 610		CKSQYB104K25	R 1608 1609		RS1/16S162J
			R 1610		RS1/16S103J
			R 1801 1802		RS1/8S821J

DEH-605RDS, 505SDK, 505, 405SDK, 405

=====Circuit Symbol & No. Part Name=====	Part No.	=====Circuit Symbol & No. Part Name=====	Part No.
CAPACITORS			
C 1001 1008 1010 1011 1303	CKSRYB102K50	Unit Number : CWX1662(DEH-505SDK,505)	
C 1002 1609 1706	CEV101M6R3	Unit Name : Key Board Unit	
C 1003	CKSQYB104K16	MISCELLANEOUS	
C 1004	CEV470M6R3	IC 921	LCT582E
C 1005	CCSRCH101J50	IC 922	RPM-678CBR
C 1006	CKSRYB561K50	D 921 922 923	MA153-MC
C 1007 1704	CKSYB334K16	IL 921 922 923	CEL1295
C 1009	CCSRCH181J50	IL 924 925 926	CEL1297
C 1012 1307 1310 1605 1608	CKSRYB103K50	LCD901	CW1229
C 1013	CKSRYB472K50	RESISTORS	
C 1014	CCSRCH220J50	R 921	(DEH-505SDK,505)
C 1015 1016 1017 1018 1201 1202	CKSYF105Z16	R 923 926 930 934	RS1/10S470J
C 1021	CKSYB104K16	R 924 927 931 935	RS1/8S822J
C 1022	CKSRYB332K50	R 925 928 932 936	RS1/10S133J
C 1023	CKSRYB561K50	R 929 933 937	RS1/10S223J
C 1301 1302	CKSRYF883Z25	CAPACITORS	
C 1304	CKSRYB152K50	C 921	(DEH-505SDK,505)
C 1305	CKSRYB271K50	C 922	CEA470M6R3LS
C 1308	CKSRYF103Z50	C 923	CCSQCH301J50
C 1309	CEV470M16	C 924	CKSQYF104Z25
C 1601	CCSRCH151J50	C 925	CKSQYF224Z25
C 1602	CCSRCH100D50	MISCELLANEOUS	
C 1603 1604 1705	CKSYB224K16	Unit Number :	CKSQYB103K50
C 1606 1607	CCSRCH090D50	Unit Name : Detector P.C.Board	
C 1612	CEV220M6R3	P 1 2	Photo Transistor
C 1613 1614	CEV4R7M35		PT4800
C 1701 1702	CCSRCH100D50		
C 1703	CEV220M16		
Unit Number : CWX1661(DEH-605RDS) Unit Name : Key Board Unit			
MISCELLANEOUS			
IC 901	PD6122A	M 1	Motor Unit(Spindle)
Q 901 902	2SB1132	M 2	Motor Unit(Carriage)
Q 903	UN2211	M 3	Motor Unit(Loading)
D 901 902	MA153-MC		PU Unit
D 903	MA3047M		CGY1031
L 901	Coil		
X 901	Ceramic Resonator		
IL 901 902 903	Lamp 14V 40mA		
IL 904 905 906	Lamp 14V 40mA		
LCD901	LCD		
RESISTORS			
R 901 902 903 908	RS1/8S222J		
R 904 906	RS1/10S472J		
R 905 907	RS1/10S332J		
R 909 910	RS1/8S471J		
R 911 912 913 914 915 916 917 918 919	RS1/10S471J		
R 920	RS1/10S121J		
CAPACITORS			
C 901 902 903 904	CKSQYB103K25		

- The DEH-505SDK, DEH-505, DEH-405SDK and DEH-405 Parts Lists enumerate the parts which differ from those enumerated in the DEH-605RDS Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The DEH-605RDS Parts List is given on page 1-42.

Tuner Amp Unit

Circuit Symbol & No.	DEH-605RDS	DEH-505SDK	DEH-505	DEH-405SDK	DEH-405
	Part No.	Part No.	Part No.	Part No.	Part No.
Tuner Amp Unit	CWX1648	CWX1649	CWX1651	CWX1650	CWX1652
IC601	PD4483B	PDR009B	PDR009B	PDR009B	PDR009B
IC771	CWV1044	CWV1045	.....	CWV1045	.....
Q455,456,771	2SC2712	2SC2712	.....	2SC2712	.....
Q601	DTC114EK	DTC114EK	.....	DTC114EK	.....
Q773	2SC2712	.....	.....	.....	.....
Q851,852	.....	2SC2712	2SC2712	.....	.....
D771	1SS133	.....	.....	.....	.....
D772	MTZ4R7B	MTZ4R7B	.....	MTZ4R7B	.....
VR771	VRMB6VS222	.....	.....	.....	.....
BZ601	CPV1011	CPV1011	.....	CPV1011	.....
X601	CSS1023	CSS1065	CSS1065	CSS1065	CSS1065
FM/AM Tuner Unit	CWE1313	CWE1311	CWE1311	CWE1311	CWE1311
R605,606,780	RS1/10S102J	RS1/10S102J	.....	RS1/10S102J	.....
R607,779	.....	RS1/10S0R0J	.....	RS1/10S0R0J	.....
R608	.....	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J
R609	.....	.....	.....	RS1/10S0R0J	RS1/10S0R0J
R611	.....	.....	RS1/10S473J	.....	RS1/10S473J
R613	.....	RS1/10S473J	RS1/10S473J	.....	.....
R614	.....	RS1/10S473J	RS1/10S473J	RS1/10S473J	RS1/10S473J
R615	.....	RS1/10S102J	.....	RS1/10S102J	.....
R636,637,638,639	.....	RD1/4PS103JL	RD1/4PS103JL	RD1/4PS103JL	RD1/4PS103JL
R640,641,642,643	.....	RS1/10S103J	RS1/10S103J	RS1/10S103J	RS1/10S103J
R644	.....	RS1/10S103J	RS1/10S103J	RS1/10S103J	RS1/10S103J
R648	RS1/10S682J	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J
R649	.....	RS1/10S105J	RS1/10S105J	RS1/10S105J	RS1/10S105J
R673	RD1/4PS103JL	.....	.....	.....	.....
R771	RS1/10S471J	RS1/10S471J	.....	RS1/10S471J	.....
R772	RS1/10S473J	RS1/10S473J	.....	RS1/10S473J	.....
R773,774,775,776	RS1/10S473J	.....	.....	.....	.....
R777,778	RS1/10S473J	.....	.....	.....	.....
R781	RS1/10S152J	RS1/10S152J	.....	RS1/10S152J	.....

DEH-605RDS,505SDK,505,405SDK,405

Circuit Symbol & No.	DEH-605RDS	DEH-505SDK	DEH-505	DEH-405SDK	DEH-405
	Part No.	Part No.	Part No.	Part No.	Part No.
Tuner Amp Unit	CWX1648	CWX1649	CWX1651	CWX1650	CWX1652
R782	RS1/10S332J	RS1/10S332J	.....	RS1/10S332J	.....
R783	RS1/10S102J	.....	.....	.....	.....
R784	RS1/10S101J	RS1/10S101J	.....	RS1/10S101J	.....
R851,852	.....	RD1/4PS821JL	RD1/4PS821JL	.....	.....
R853,854	.....	RS1/10S222J	RS1/10S222J	.....	.....
R855,856	.....	RS1/10S223J	RS1/10S223J	.....	.....
C604,605	CCSQCH150J50	.....	.....	.....	.....
C610	CKSQYB104K25	.....	.....	.....	.....
C772	CKSQYB103K25	CKSQYB103K25	.....	CKSQYB103K25	.....
C773	CEA100M16LL	CEA100M16LL	.....	CEA100M16LL	.....
C851	.....	CEAS100M16	CEAS100M16	.....	.....
C852	.....	CEA100M16LL	CEA100M16LL	.....	.....
C853,854	.....	CCSQCH221J50	CCSQCH221J50	.....	.....



Service Manual

ORDER NO.
CRZ1563

The chapter 1 of this Service Manual will not be reprinted. On your additional orders, we may supply only the chapter 2. For the chapter 1, please make copies and attach to the chapter 2 at your side if necessary.

HIGH POWER CD PLAYER WITH RDS TUNER

DEH-605RDS **EW,X1B/EW**

HIGH POWER CD PLAYER WITH FM/MW/LW TUNER

DEH-505SDK **GR**

DEH-505 **EW,X1B/EW**

DEH-405SDK **GR**

DEH-405 **EW,X1B/EW**

- See the service manual CX-540(CRT1574) for the CD mechanism description, disassembly and circuit description.

CHAPTER 2

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CHAPTER 2

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1. PACKING METHOD

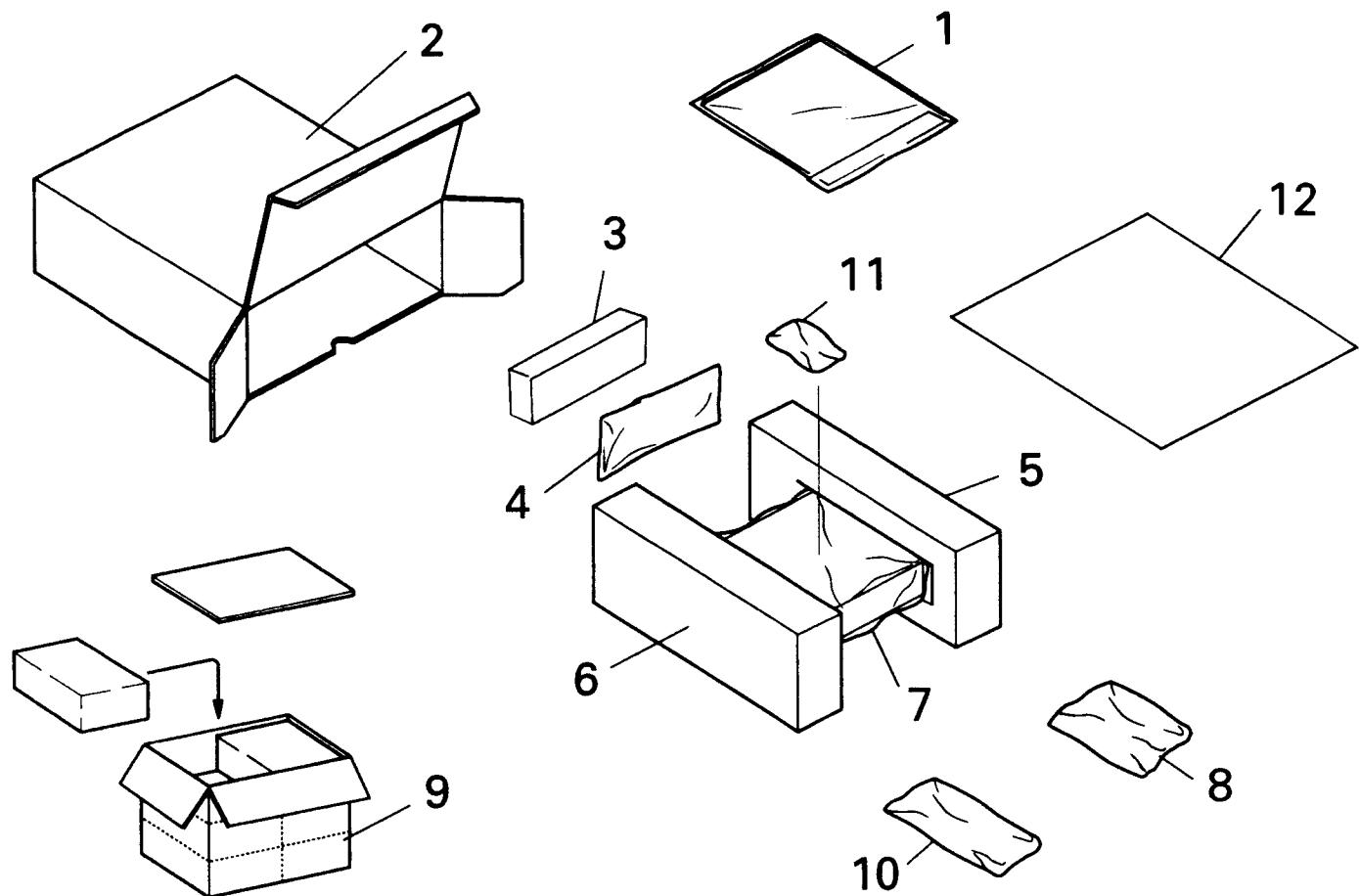


Fig.1

● Parts List(DEH-605RDS)

Mark	No.	Description	Part No.
	1-1	Owner's Manual	CRD1717
	1-2	Owner's Manual	CRD1718
	1-3	Installation Manual	CRD1719
*	1-4	Card	CRY-062
*	1-5	Passport	CRY1013
*	1-6	Caution Card	CRP1129
	1-7	Polyethylene Bag	CEG1116
	2	Carton	CHG2427
	3	Case	CNS2269
	4	Cord Assy	CDE4142
	5	Protector	CHP1603
	6	Protector	CHP1602
	7	Cover	CEG1092
	8	Accessory Assy	CEA1917
	8-1	Screw	CBA1284

Mark	No.	Description	Part No.
	8-2	Handle(X2)	CNC4947
	8-3	Bush	CNV1009
*	8-4	Polyethylene Bag	E36-615
	9	Contain Box	CHL2427
	10	.....
	11	.....
	12	Spacer(except X1B model)	CHW1387

*: Non Spare Part

- The DEH-505SDK, DEH-505, DEH-405SDK and DEH-405 Parts Lists enumerate the parts which differ from those enumerated in the DEH-605RDS Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The DEH-605RDS Parts List is given on page 2-2.

Mark	No.	Description	DEH-605RDS	DEH-505SDK	DEH-505	DEH-405SDK	DEH-405
*	1-1	Owner's Manual	CRD1717	CRD1723	CRD1720	CRD1723	CRD1720
	1-2	Owner's Manual	CRD1718	.....	.....	.....	.....
	1-5	Passport	CRY1013	CRY1013	.....	CRY1013	.....
	2	Carton	CHG2427	CHG2429	CHG2428	CHG2420	CHG2419
	9	Contain Box	CHL2427	CHL2429	CHL2428	CHL2420	CHL2419
	10	Accessory Assy	.....	CEA1473	CEA1473	.....	.....
	11	Remote Control Assy	.....	CXA6155	CXA6155	.....	.....

Owner's Manual

Model	Part No.	Language
DEH-605RDS	CRD1717	English,French,Italian,German,Dutch,Spanish,Portuguese
	CRD1718	Swedish,Norwegian,Finnish
DEH-505SDK,405SDK	CRD1723	French,German
DEH-505,405	CRD1720	English,French,Italian,German,Dutch,Spanish,Portuguese,Swedish,Norwegian,Finnish

Installation Manual

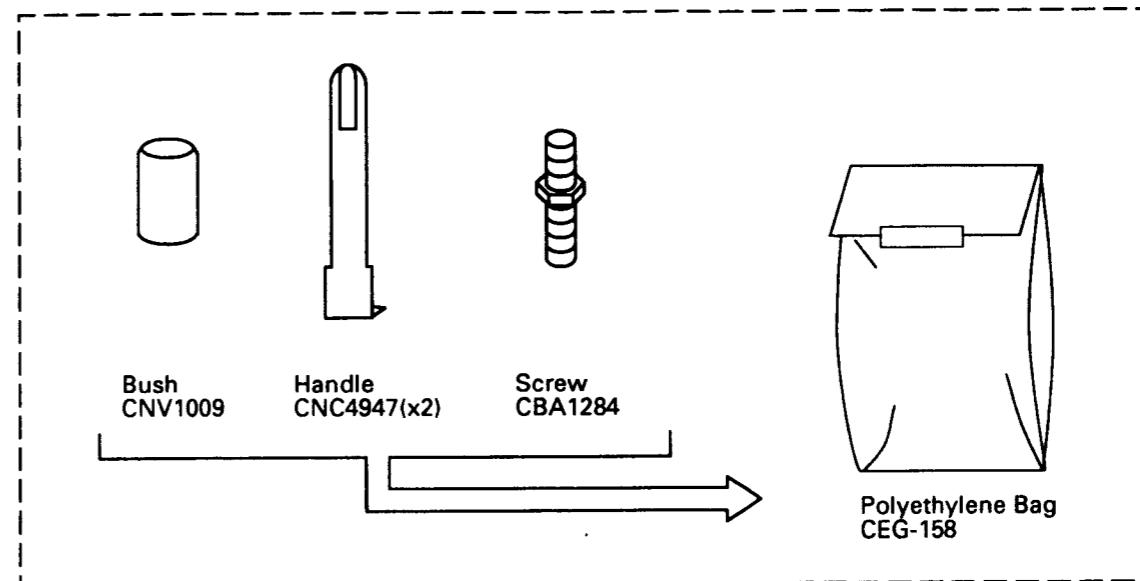
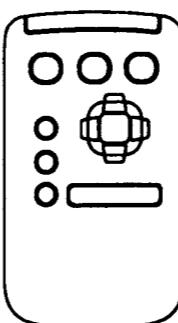
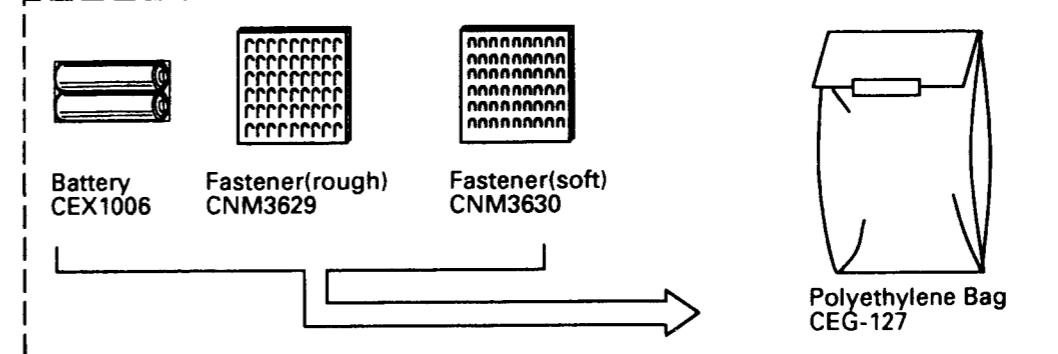
Model	Part No.	Language
DEH-605RDS, DEH-505SDK,505, DEH-405SDK,405	CRD1719	English,French,Italian,German,Dutch,Spanish,Portuguese Swedish,Norwegian,Finnish

● X1B/EW Model

Mark	No.	Description	DEH-605RDS/EW	DEH-605RDS/X1B/EW
*	1-2	Owner's Manual	CRD1718	.....
	1-4	Card	CRY-062	URY-001
	1-5	Passport	CRY1013	CRY1014
	1-7	Polyethylene Bag	CEG1116	E36-618
	7	Cover	CEG1092	UEG-002
	9	Contain Box	CHL2427	UHD-002

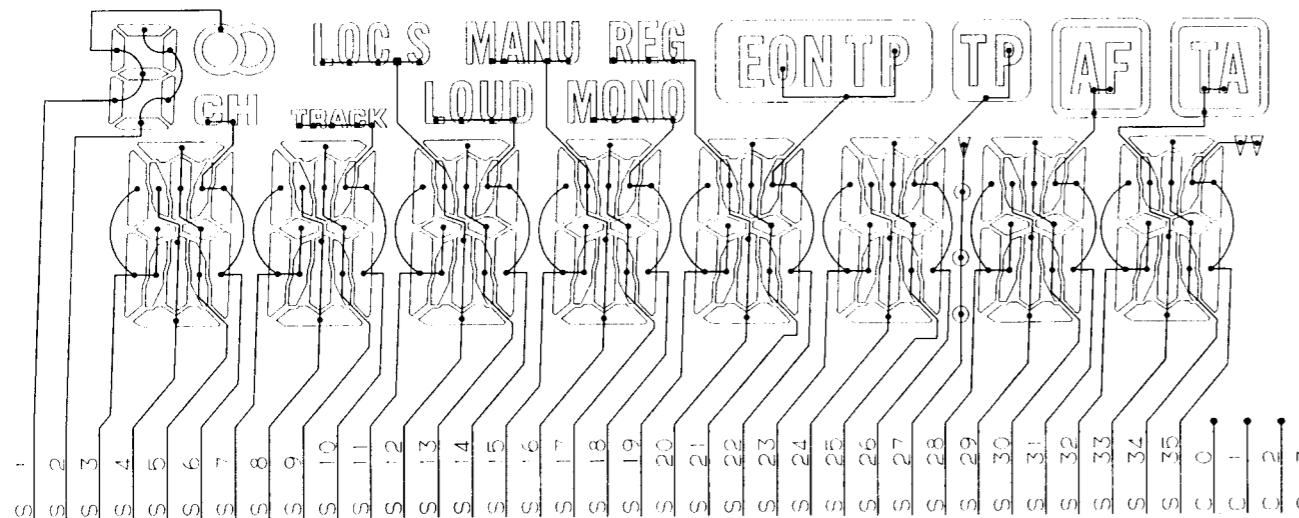
Mark	No.	Description	DEH-505/EW	DEH-505/X1B/EW
*	1-4	Card	CRY-062	URY-001
	1-7	Polyethylene Bag	CEG1116	E36-618
	7	Cover	CEG1092	UEG-002
	9	Contain Box	CHL2428	UHD-002

Mark	No.	Description	DEH-405/EW	DEH-405/X1B/EW
*	1-4	Card	CRY-062	URY-001
	1-7	Polyethylene Bag	CEG1116	E36-618
	7	Cover	CEG1092	UEG-002
	9	Contain Box	CHL2419	UHD-002

● Accessory Assy
Accessory Assy CEA1917

Remote Control Assy CXA6155

Accessory Assy CEA1473


● LCD(CAW1228).....DEH-605RDS

SEGMENT



COMMON

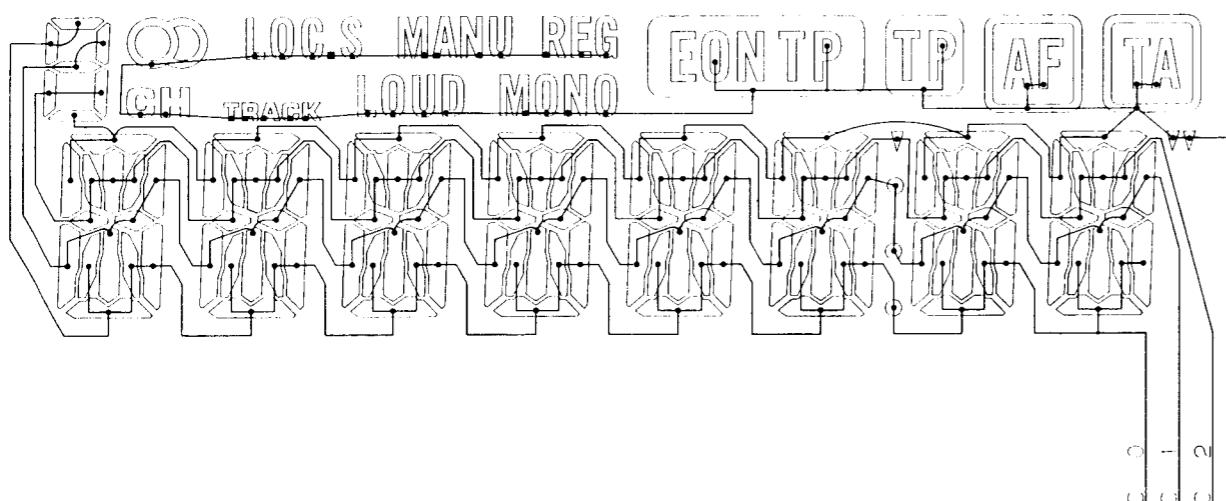
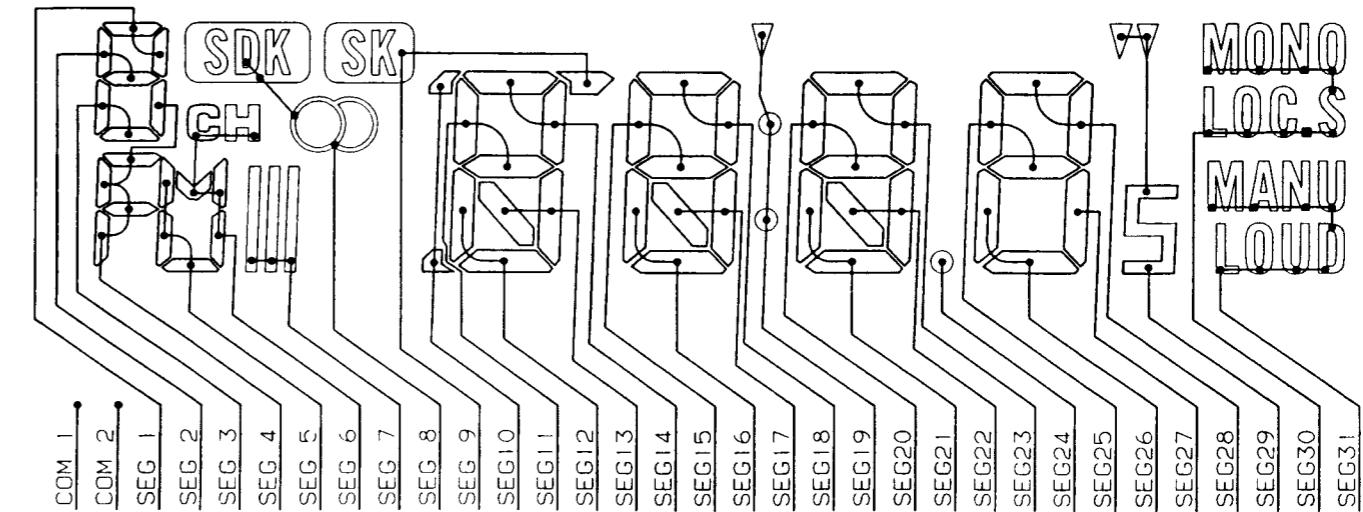


Fig.3

● LCD(CAW1229).....DEH-505SDK, 505, 405SDK, 405

SEGMENT



COMMON

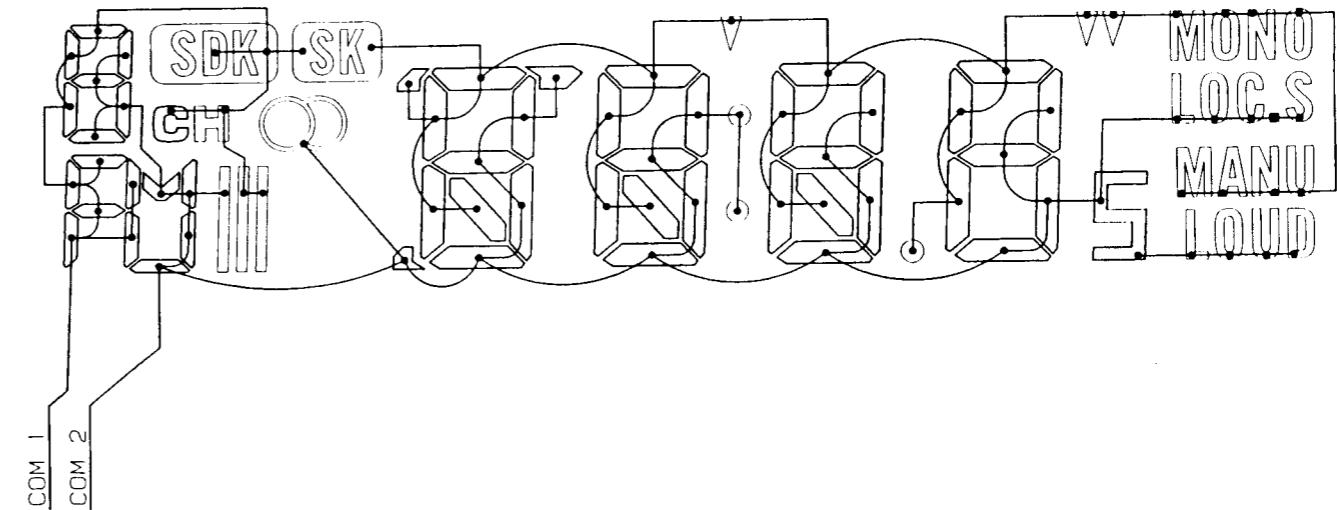
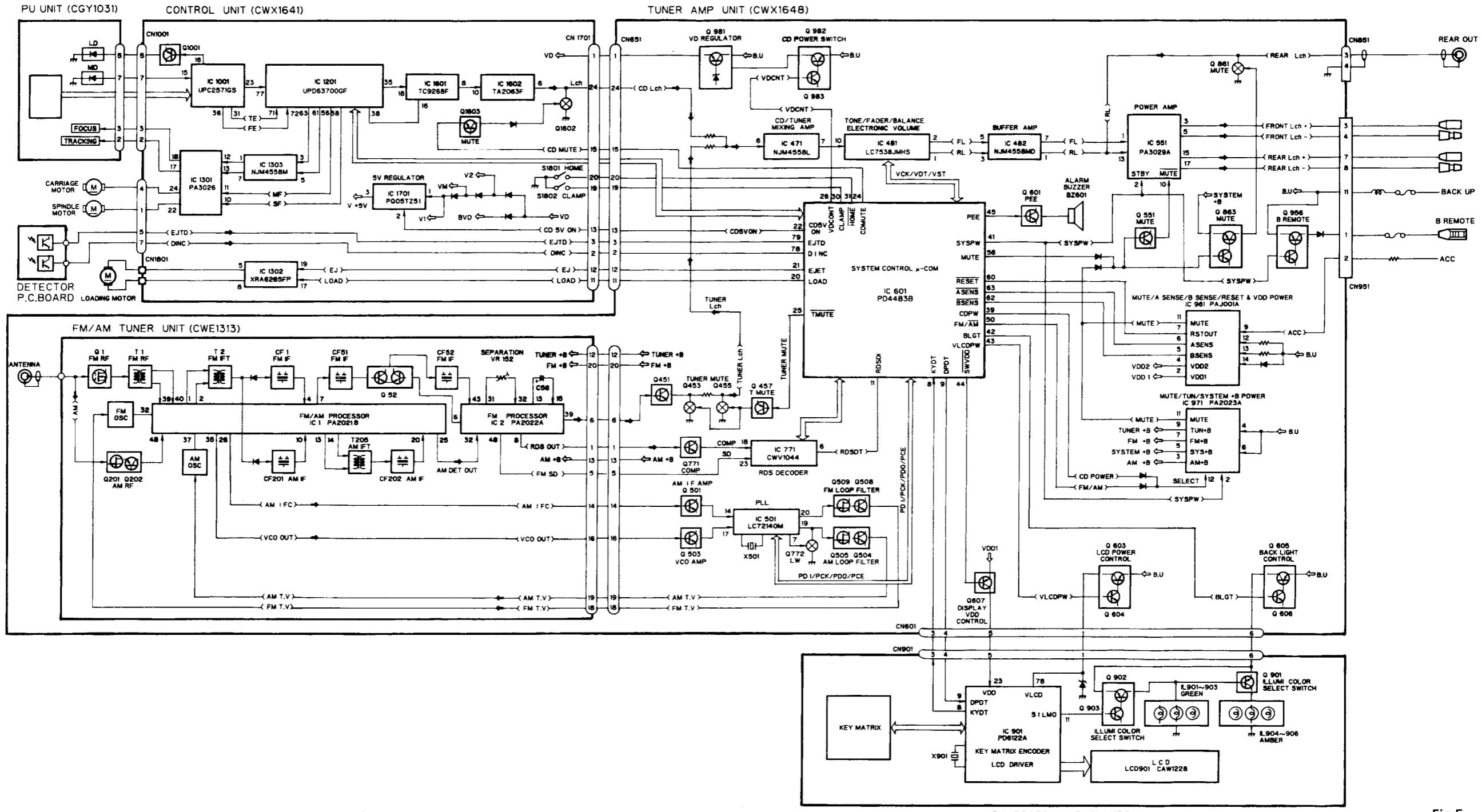


Fig.4

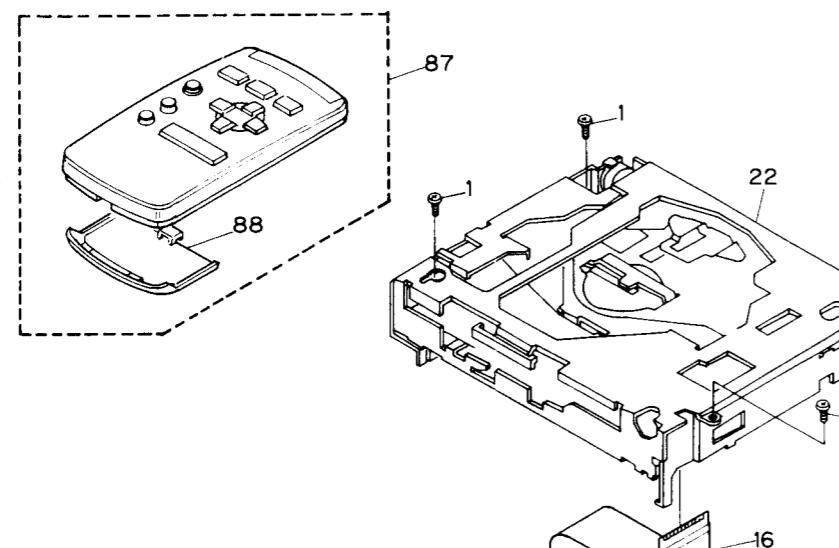
2. BLOCK DIAGRAM

● DEH-605RDS

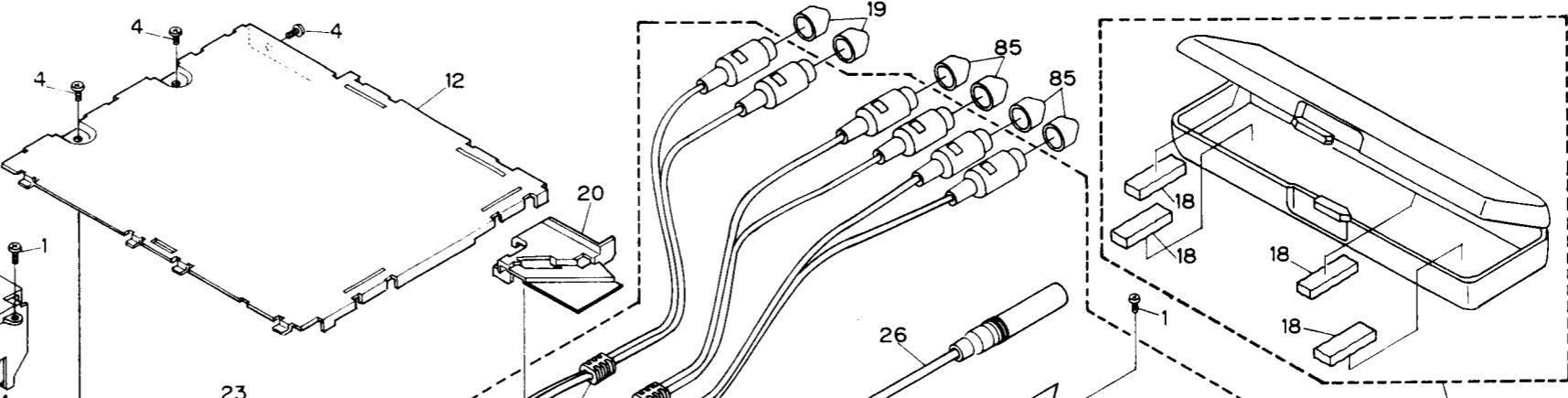


3. EXPLODED VIEW**● Chassis (Parts List:Page 1-38)**

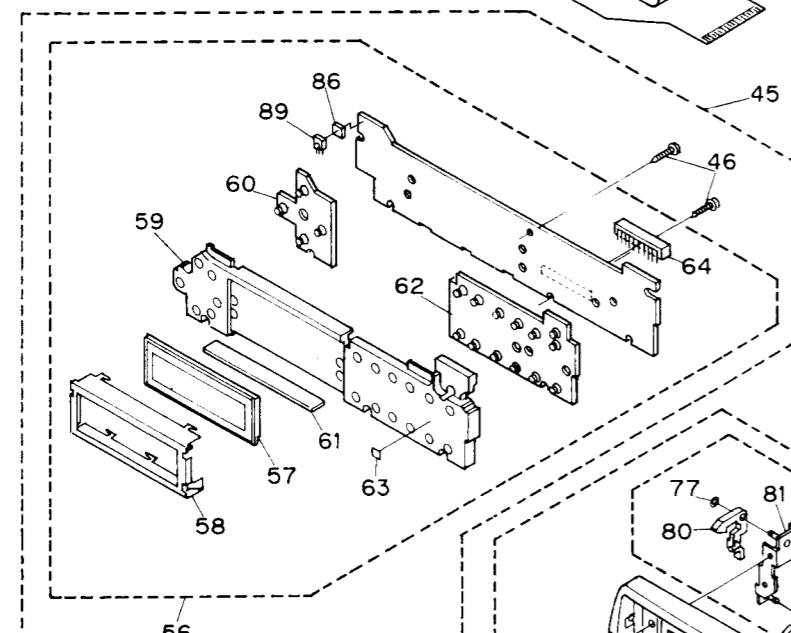
A



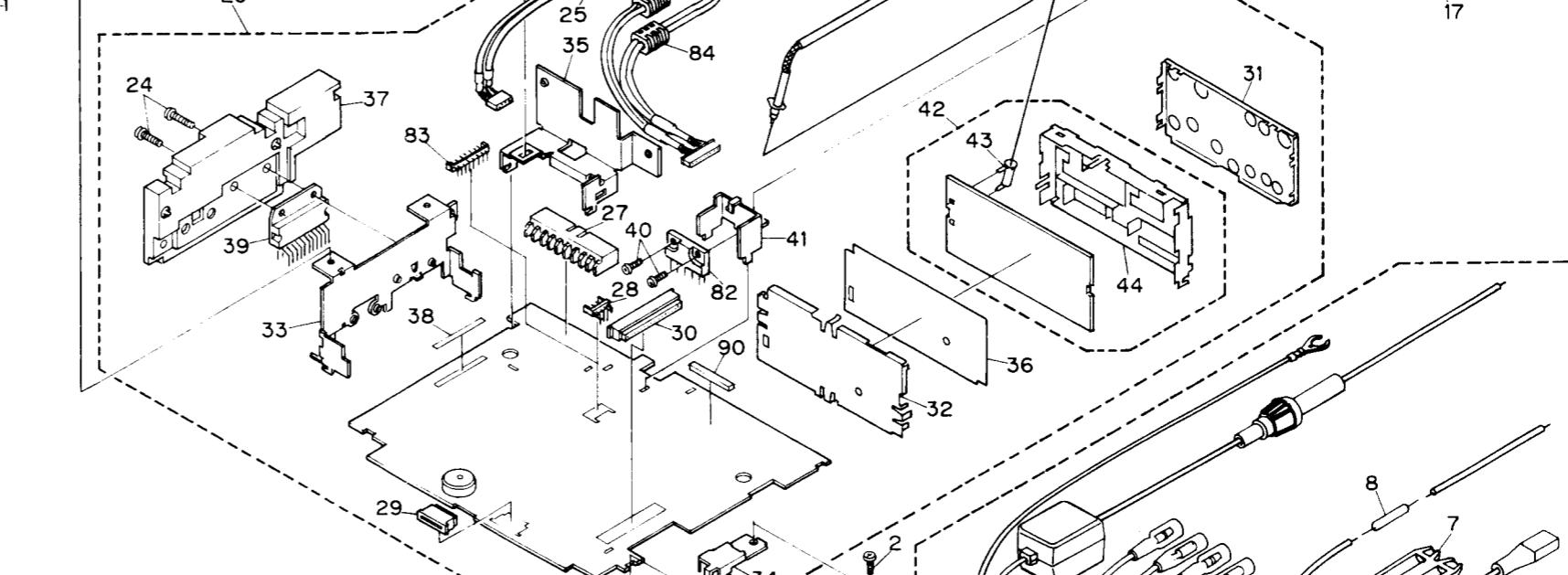
A



B



B



4. CIRCUIT DIAGRAM AND PATTERN

4.1 TUNER AMP UNIT(DEH-605RDS)

● Connection Diagram

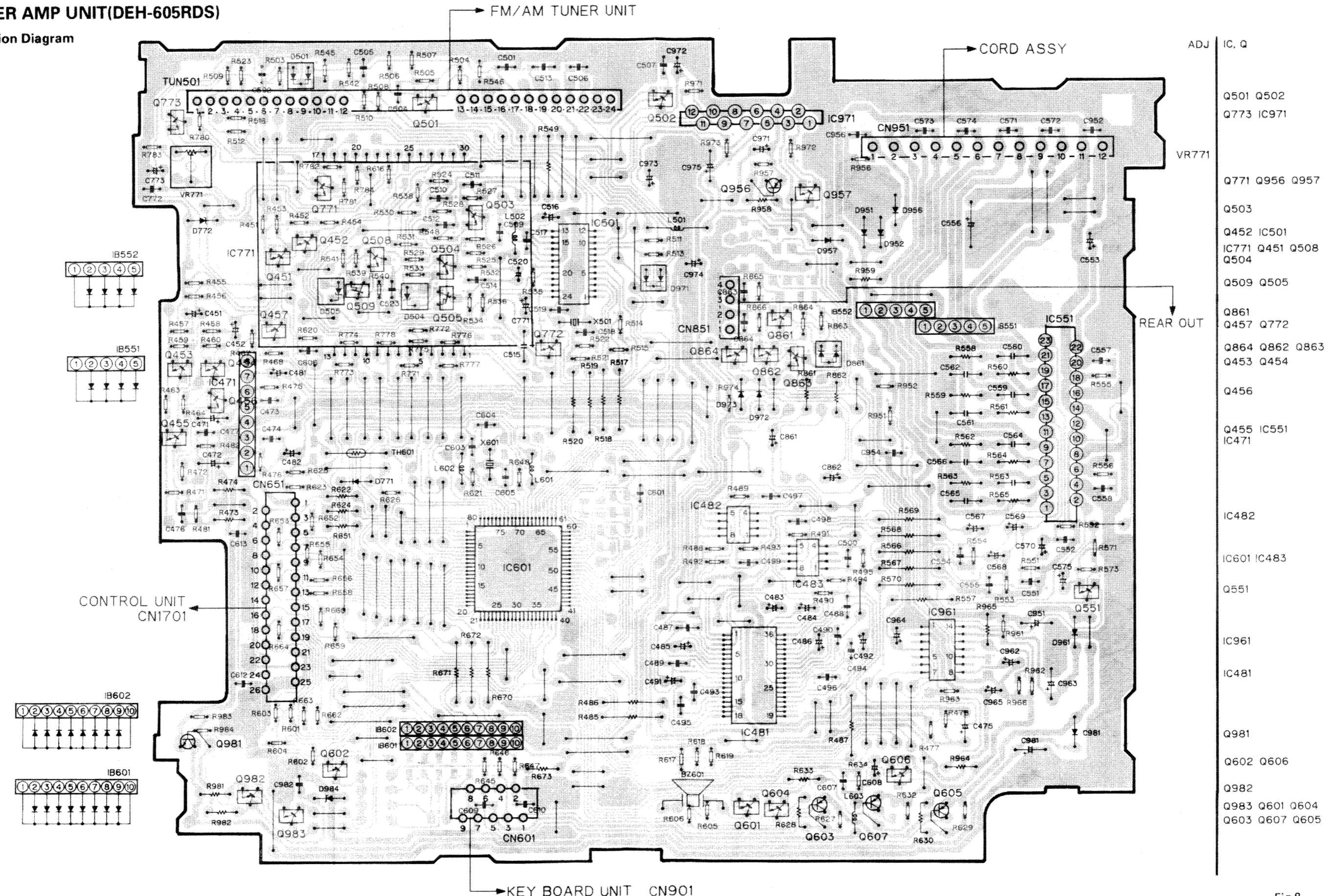


Fig.8

● CD Mechanism Module (Parts List:Page 1-39)

A

A

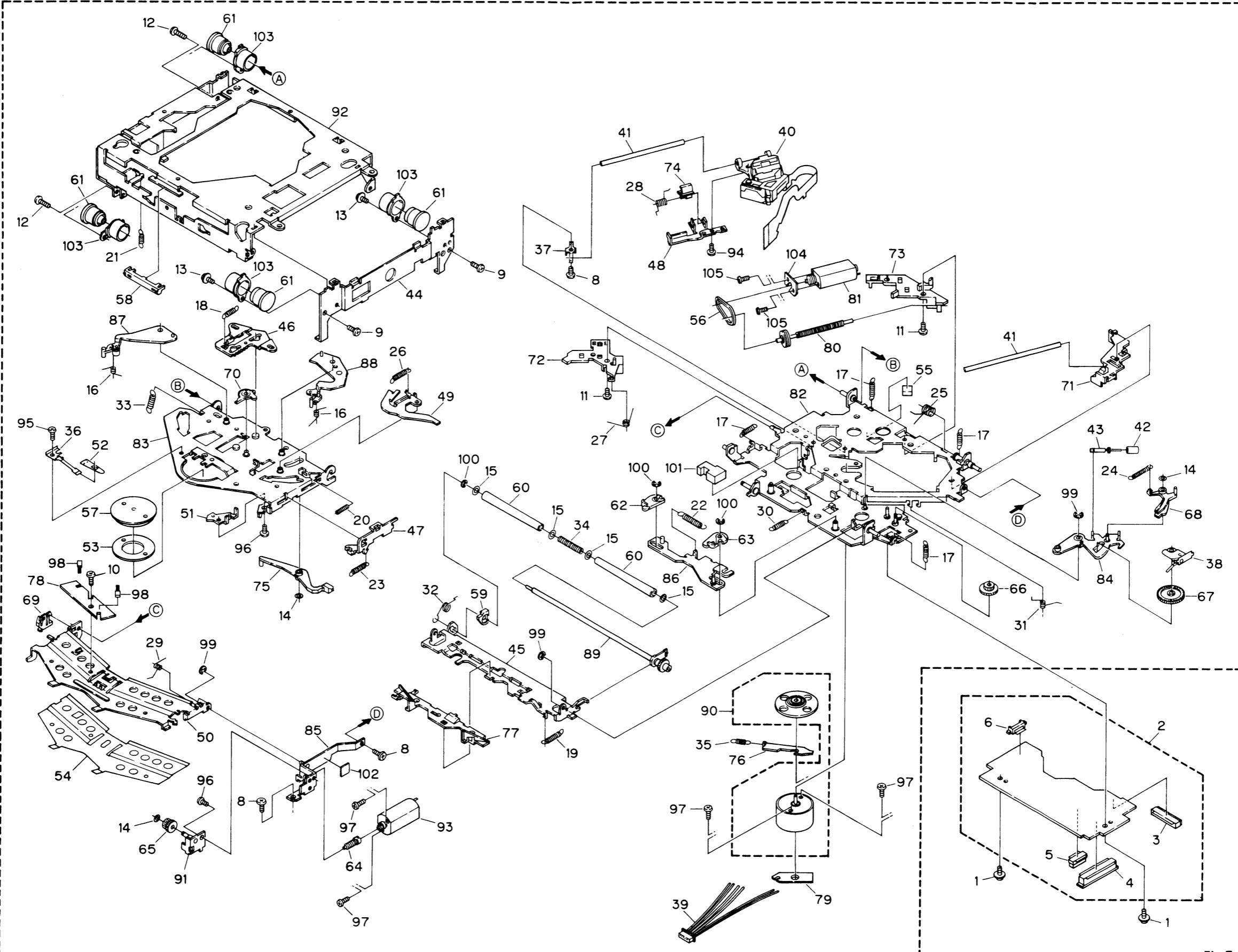
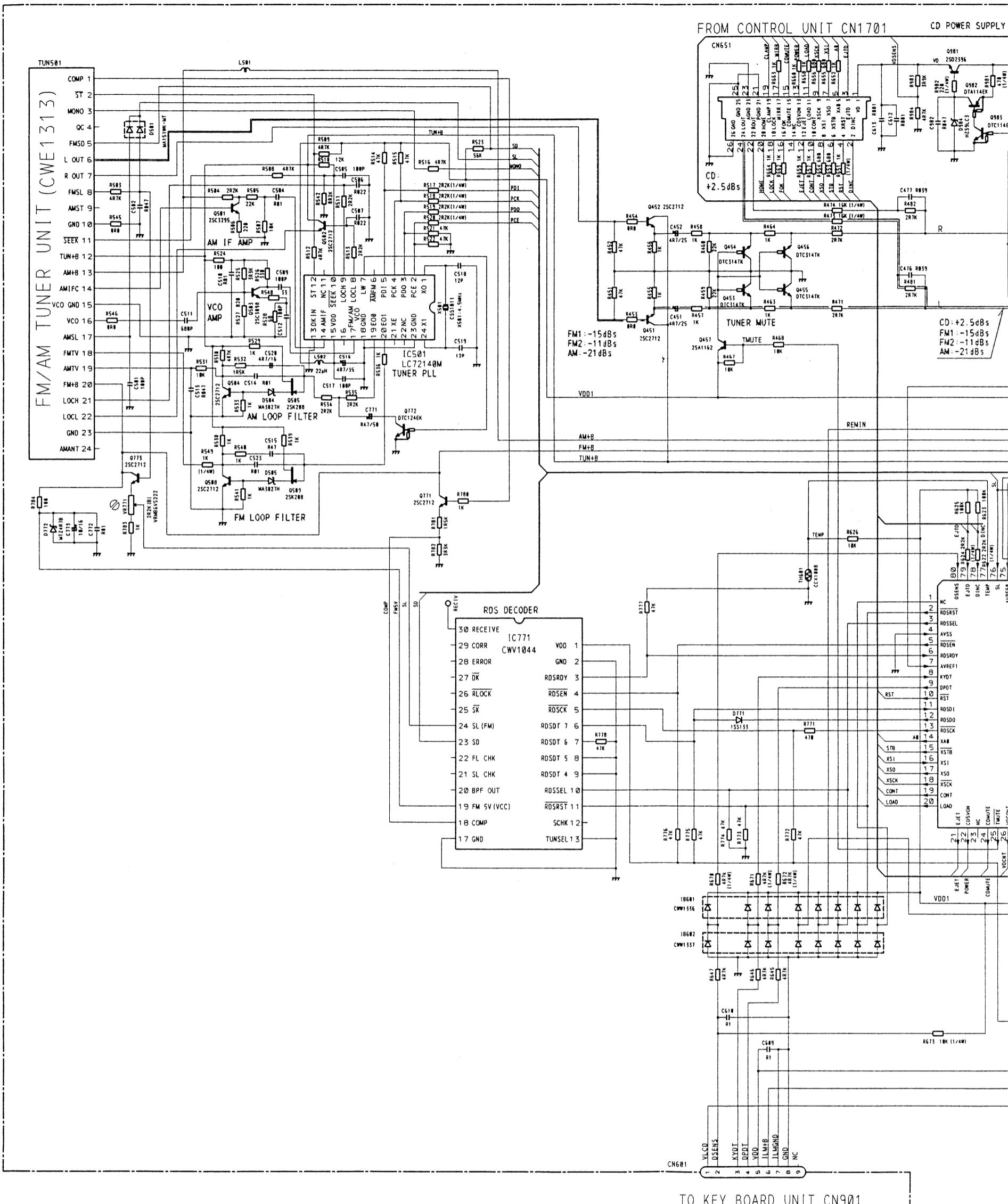


Fig.7

● Circuit Diagram

TUNER AMP UNIT (CWX1648)



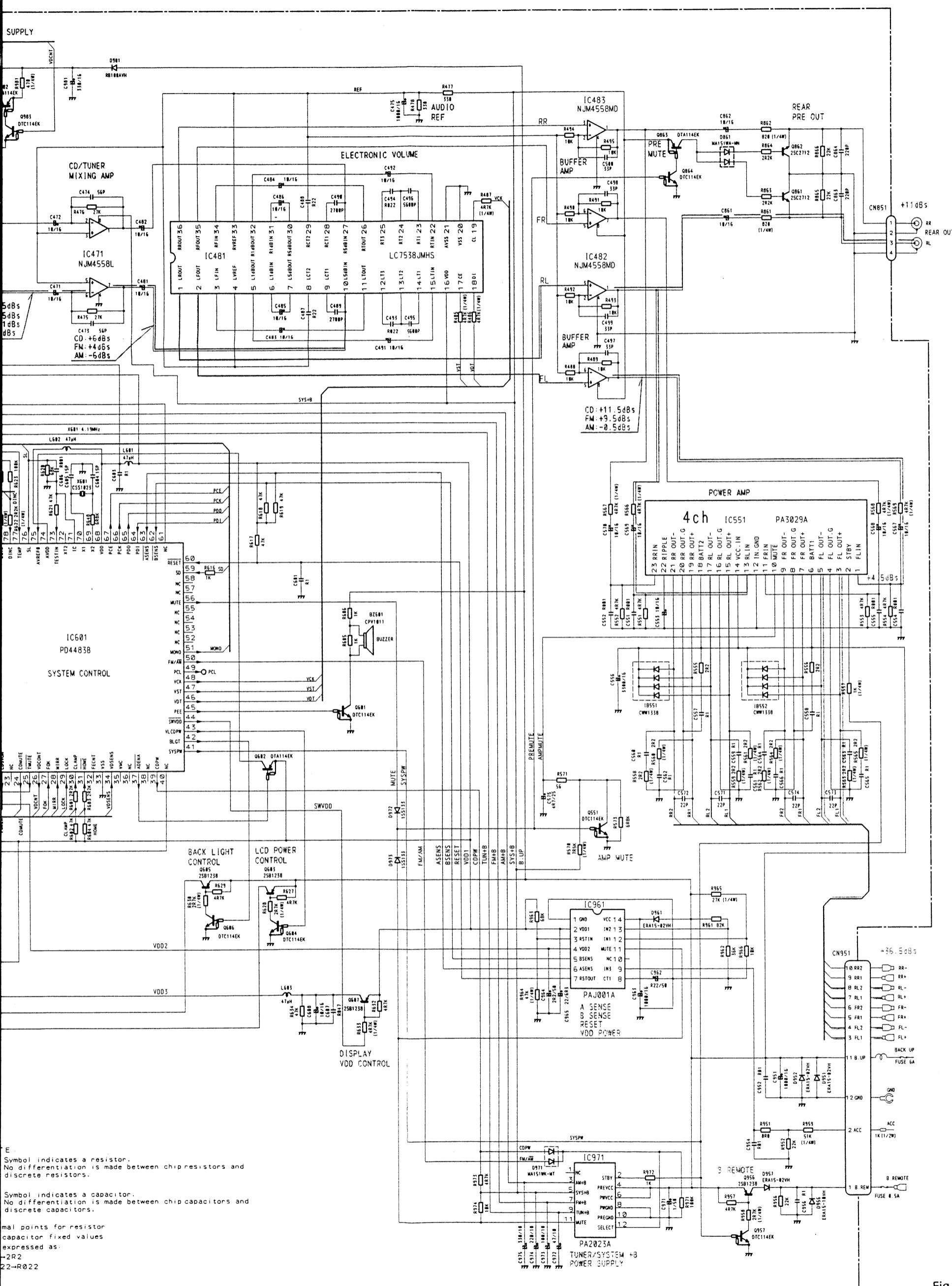


Fig.9

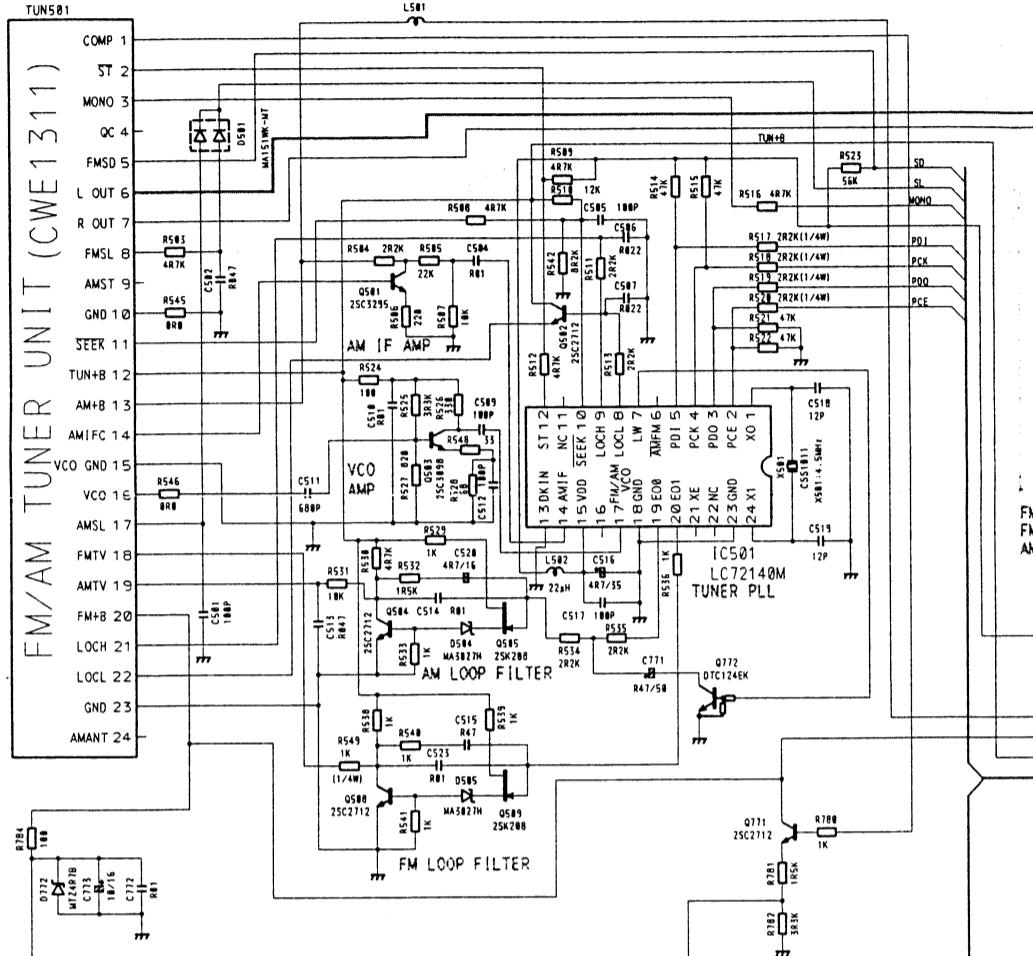
4.2 TUNER AMP UNIT(DEH-505SDK, 405SDK)

● Circuit Diagram

A

TUNER AMP UNIT (CWX1649) ··· DEH-505SDK / TUNER AMP UNIT (CWX1650) ··· DEH-405SDK

B



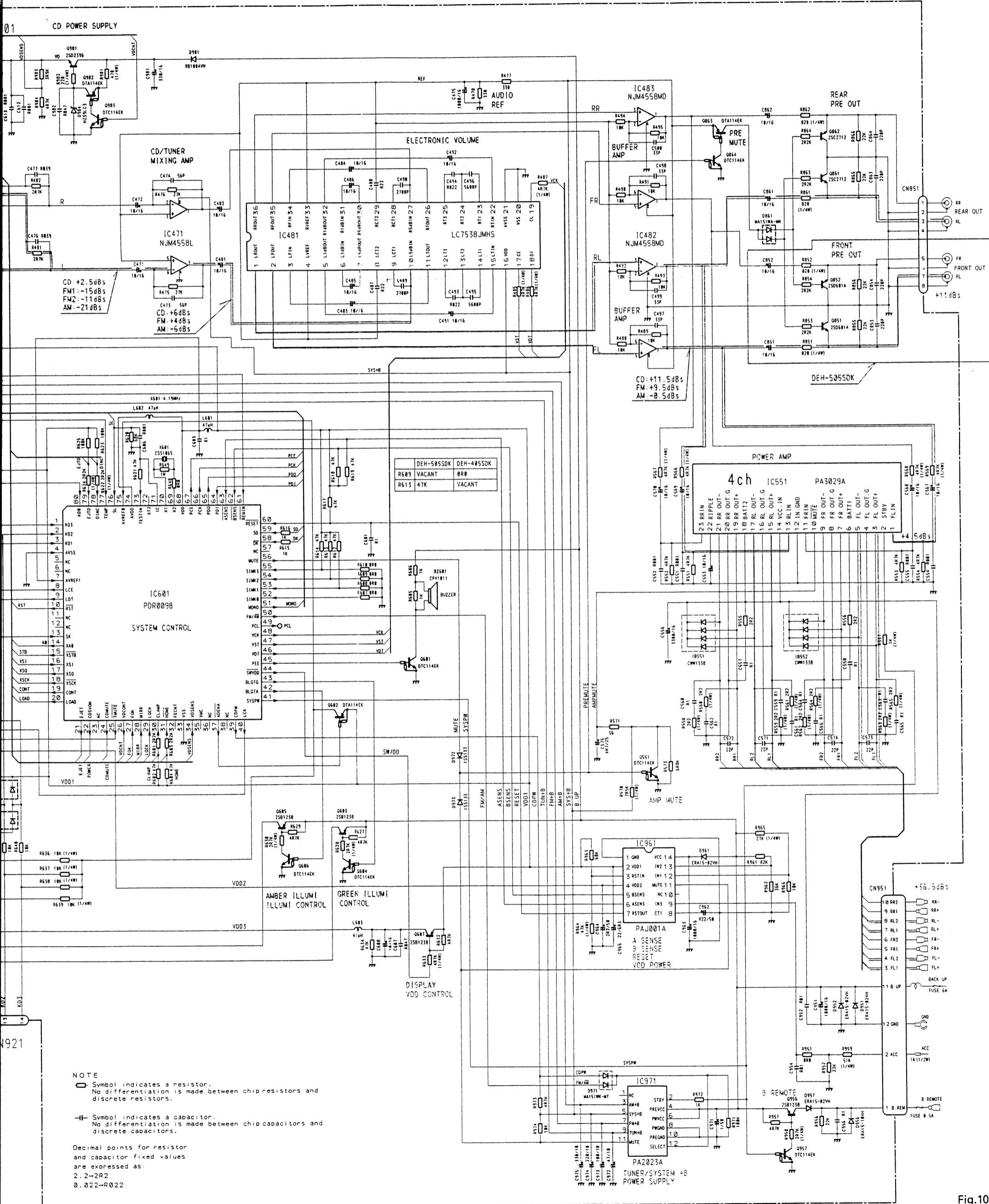


Fig.10

● Connection Diagram

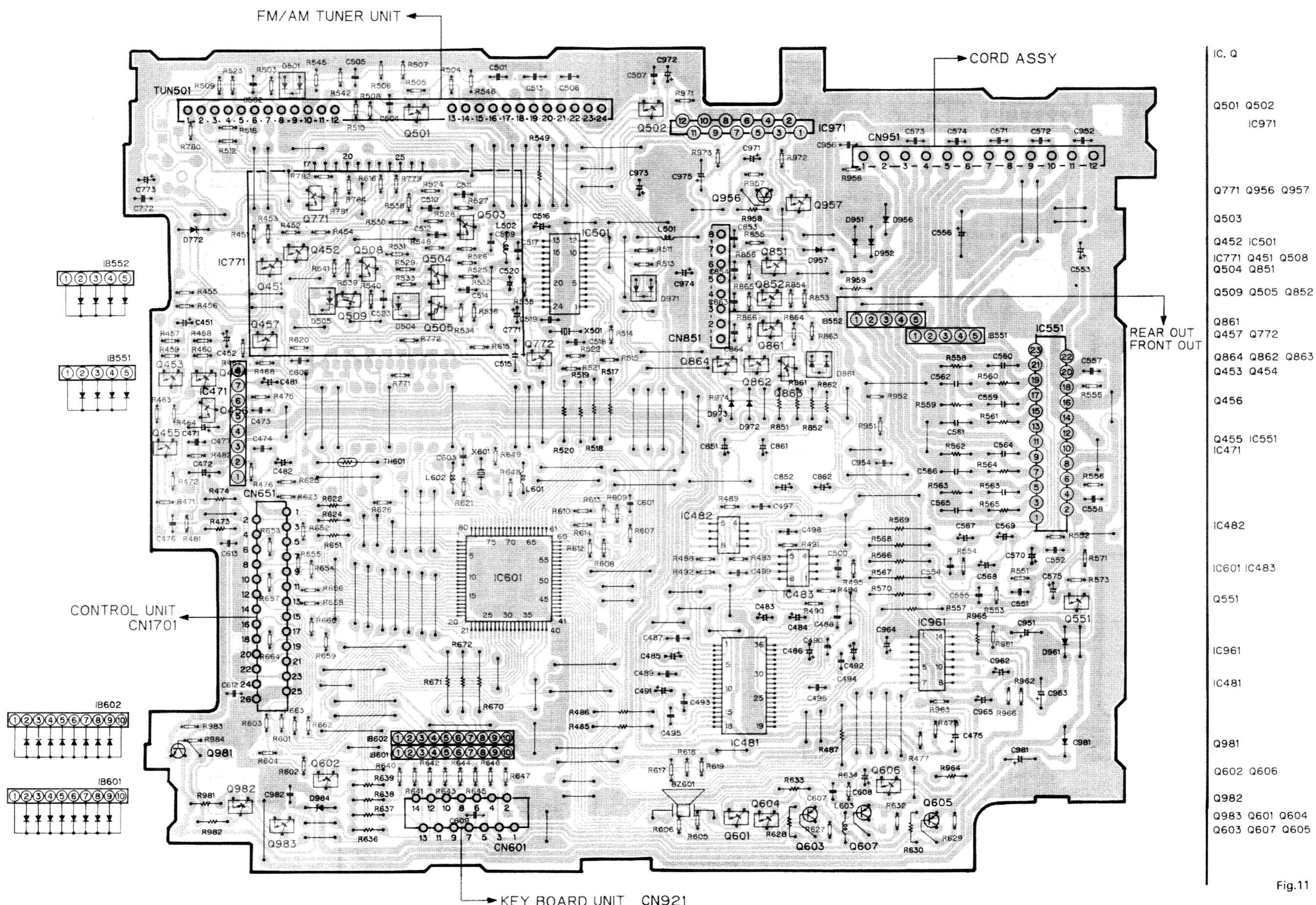


Fig. 11

4.3 TUNER AMP UNIT(DEH-505,405)

● Connection Diagram

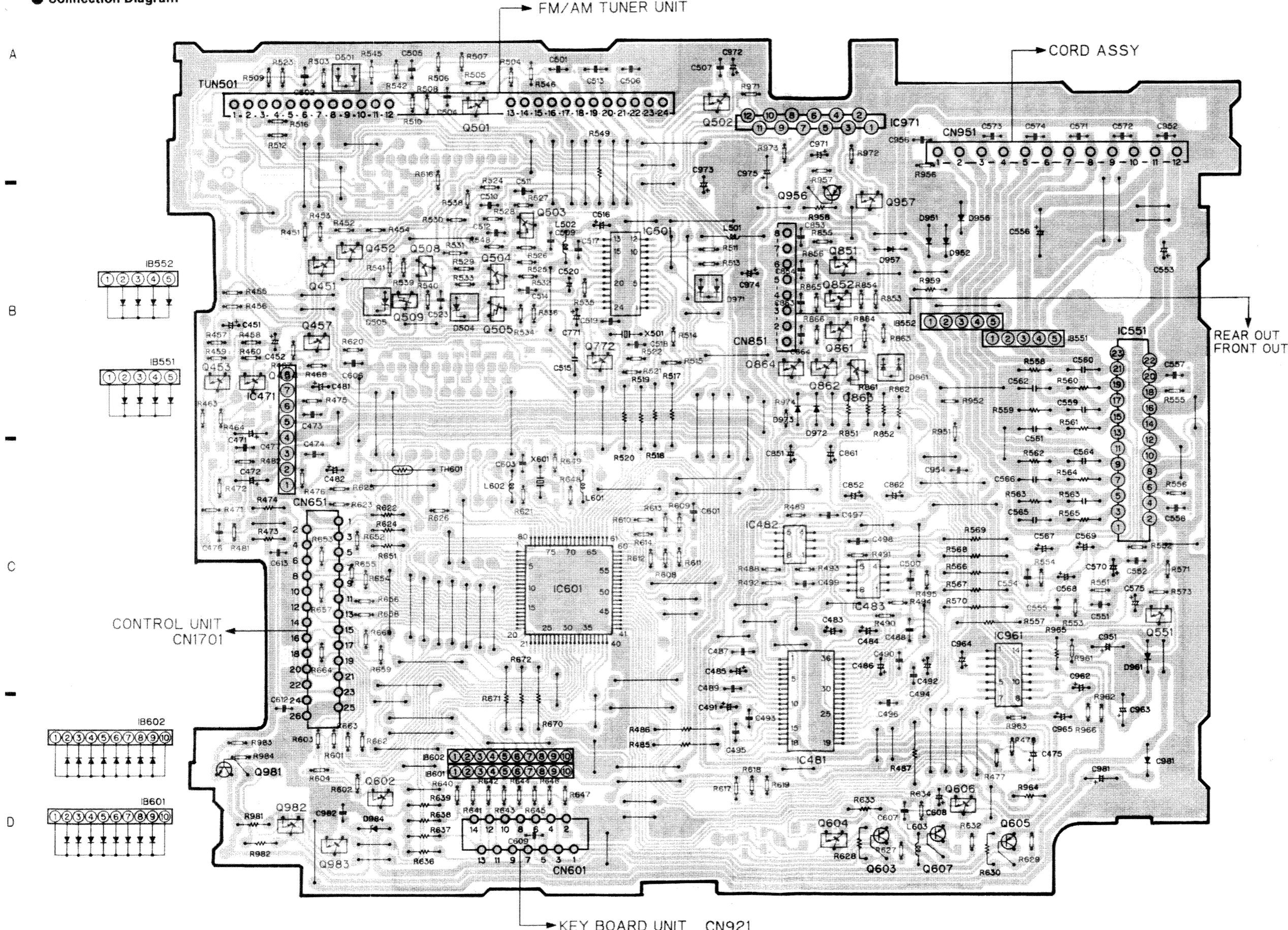
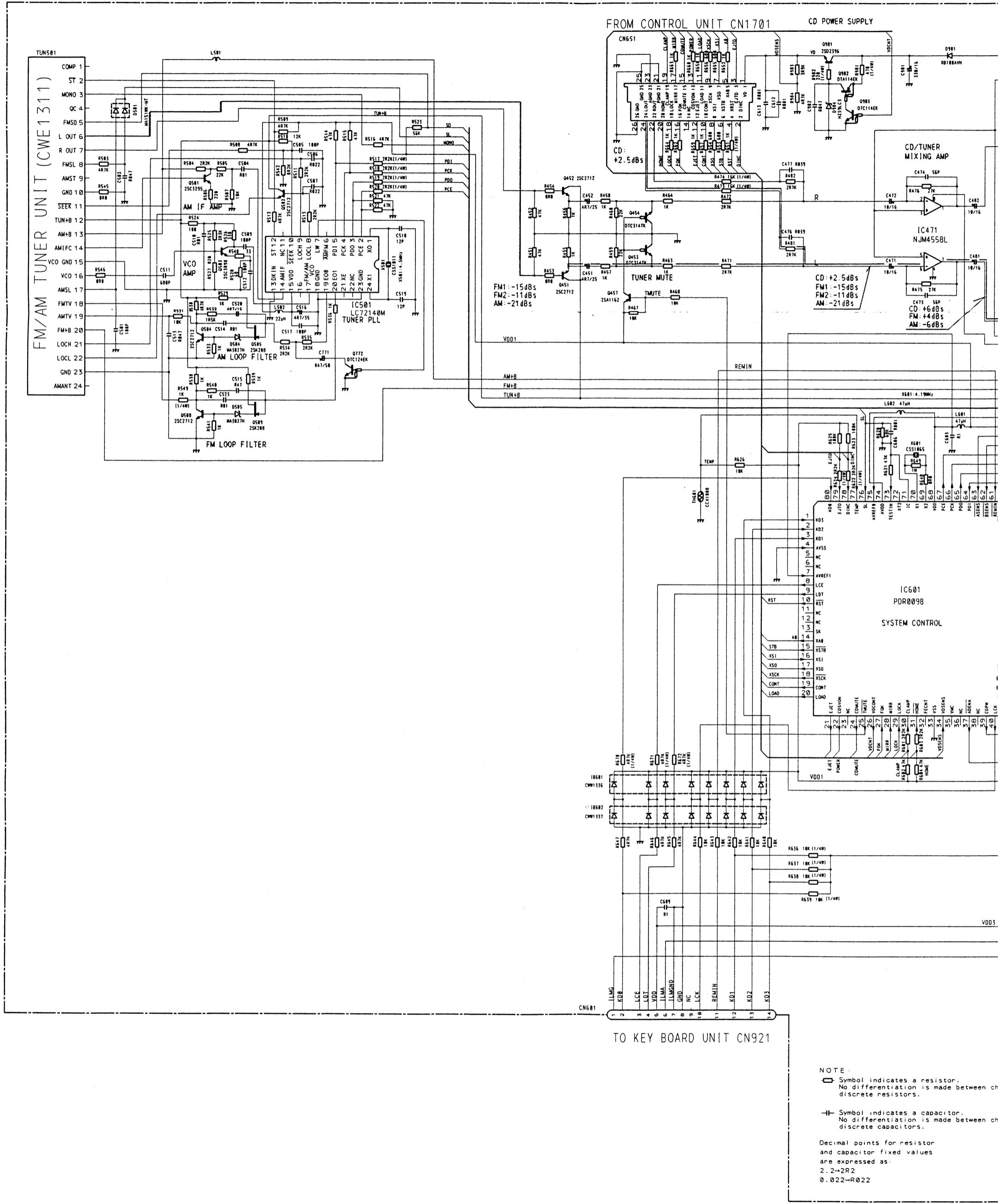


Fig. 12

● Circuit Diagram

TUNER AMP UNIT (CWX1651) DEH-505 /TUNER AMP UNIT (CWX1652) DEH-405



NOTE:
— Symbol indicates a resistor.
No differentiation is made between ch
different resistors.

-II Symbol indicates a capacitor.
No differentiation is made between ch
discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2 → 2R2

0.022→R022

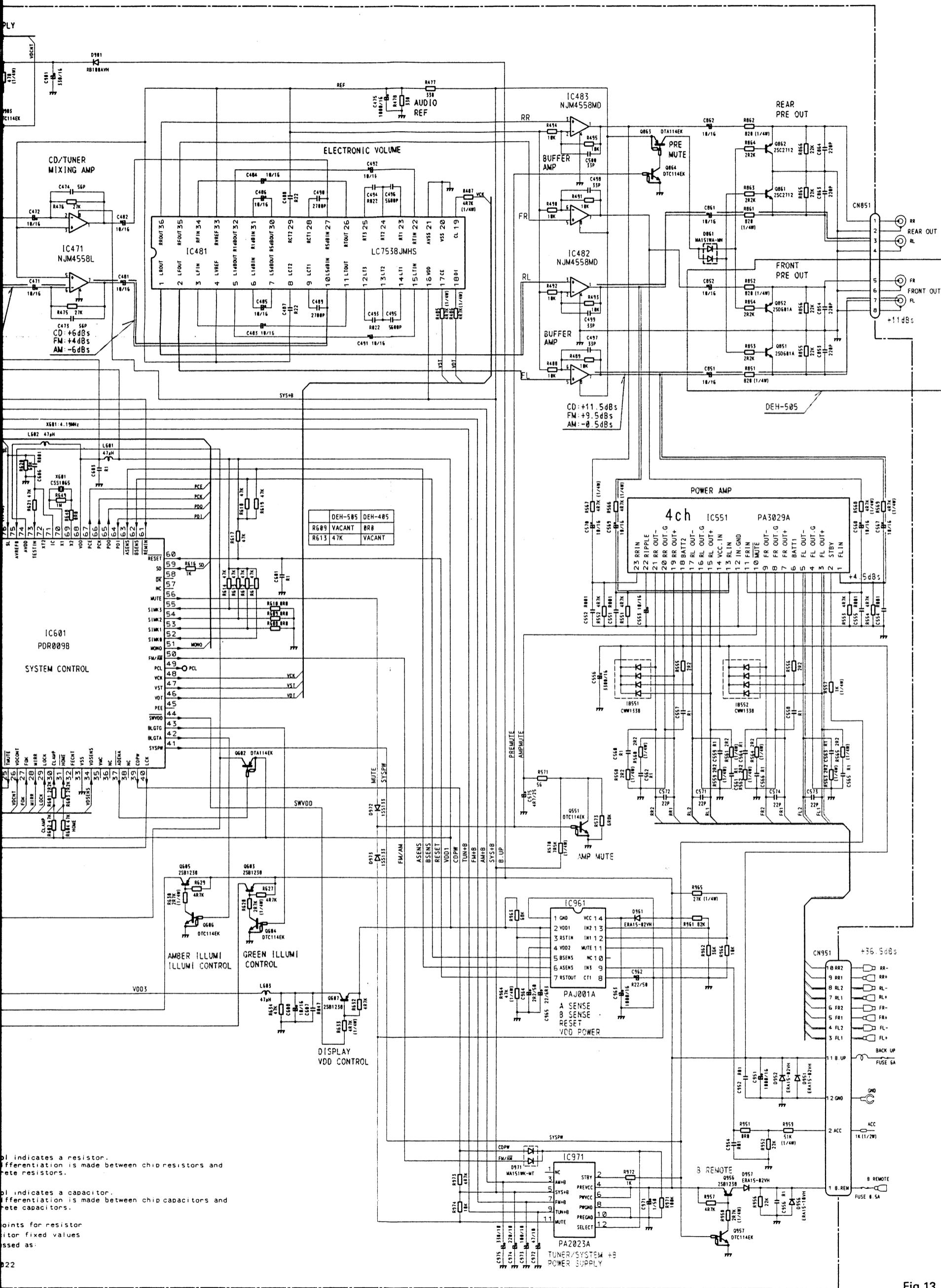
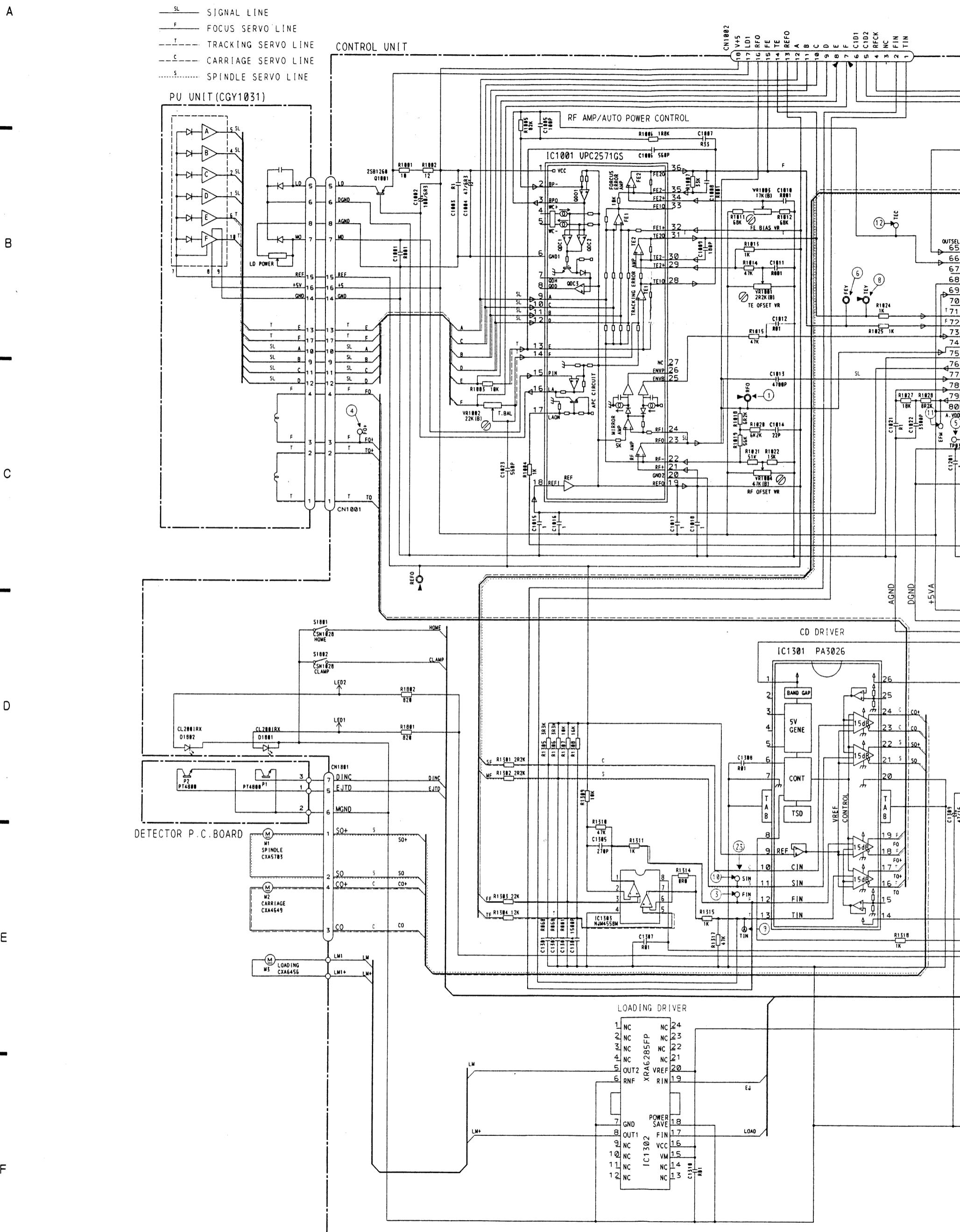
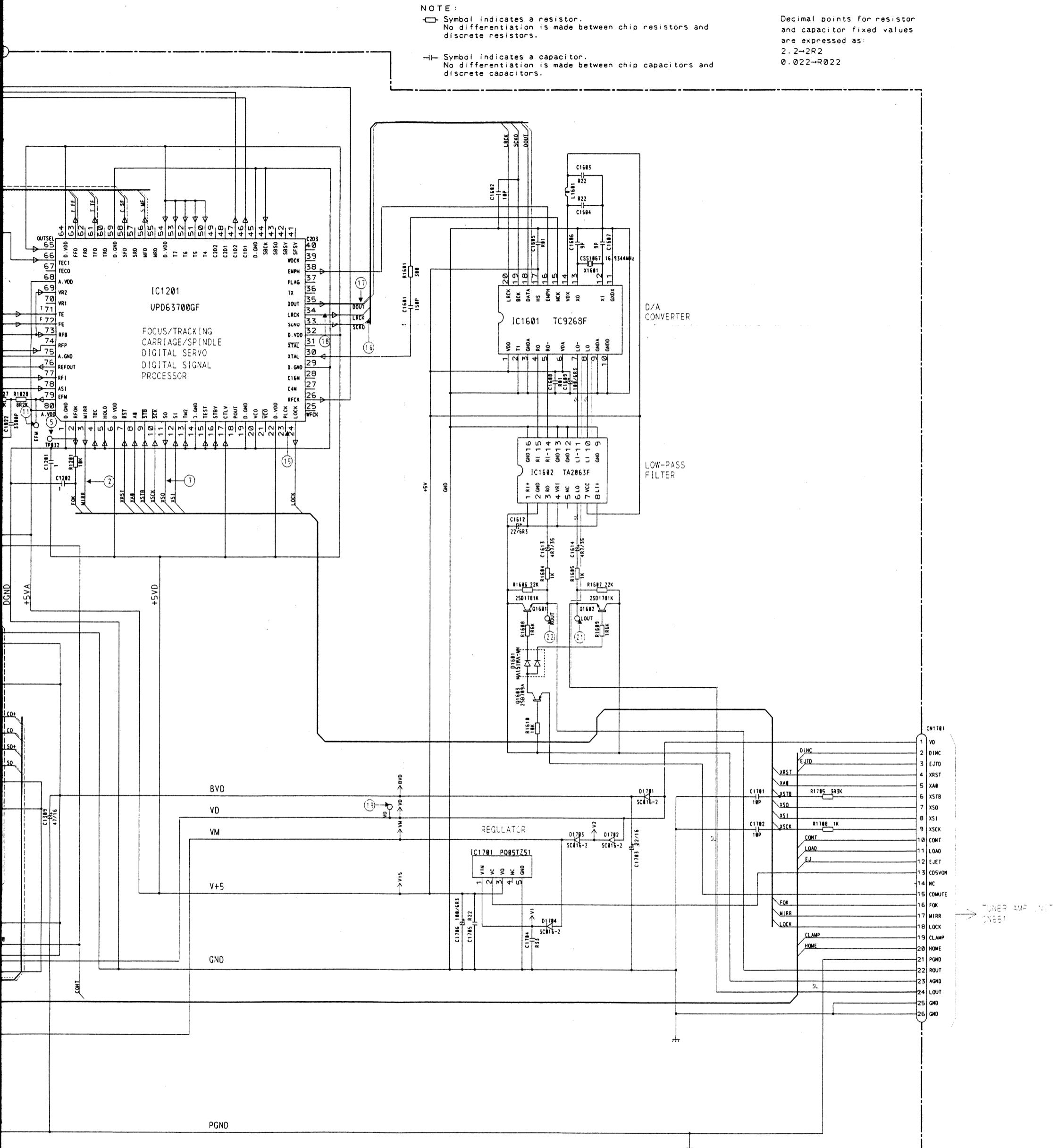


Fig.13

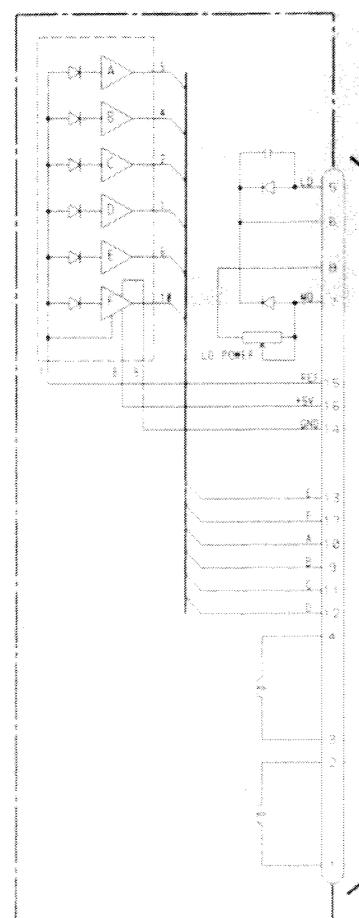
4.4 CD MECHANISM MODULE

● Circuit Diagram

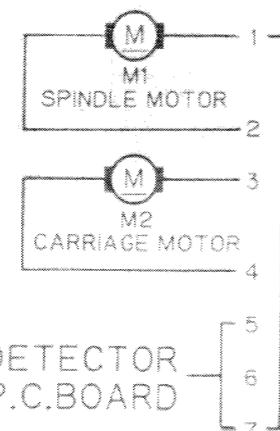




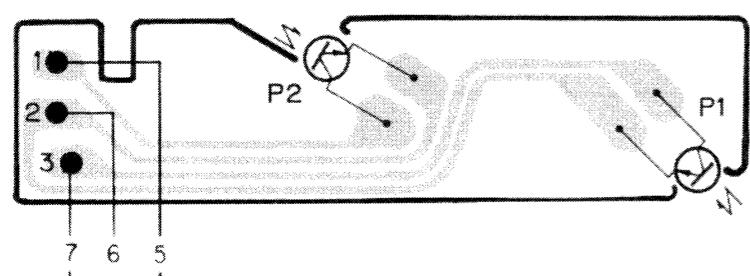
PU UNIT(CGY1031)



CONTROL UNIT
CN1001



DETECTOR P.C.BOARD

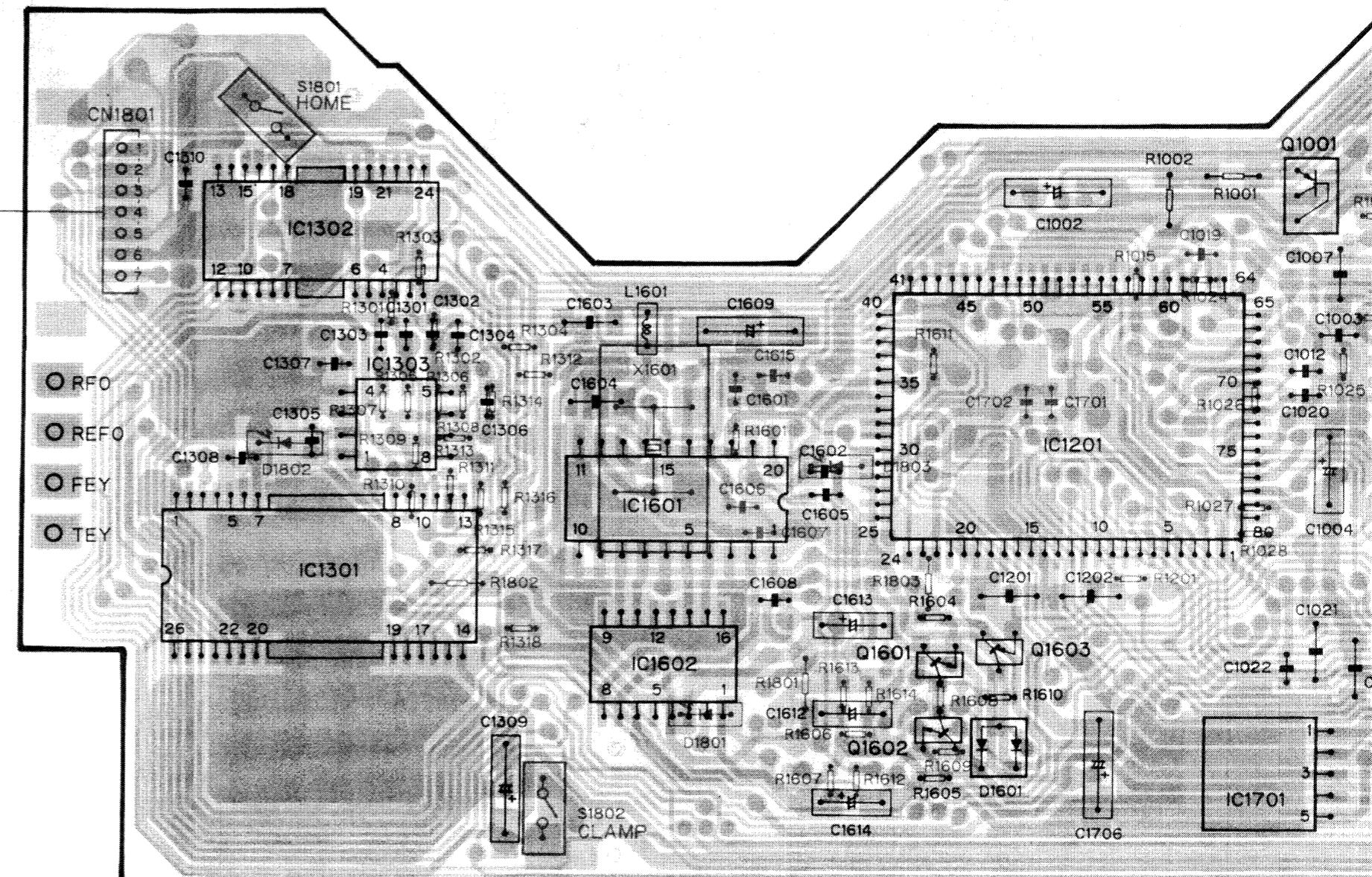


CONTROL UNIT
CN1801

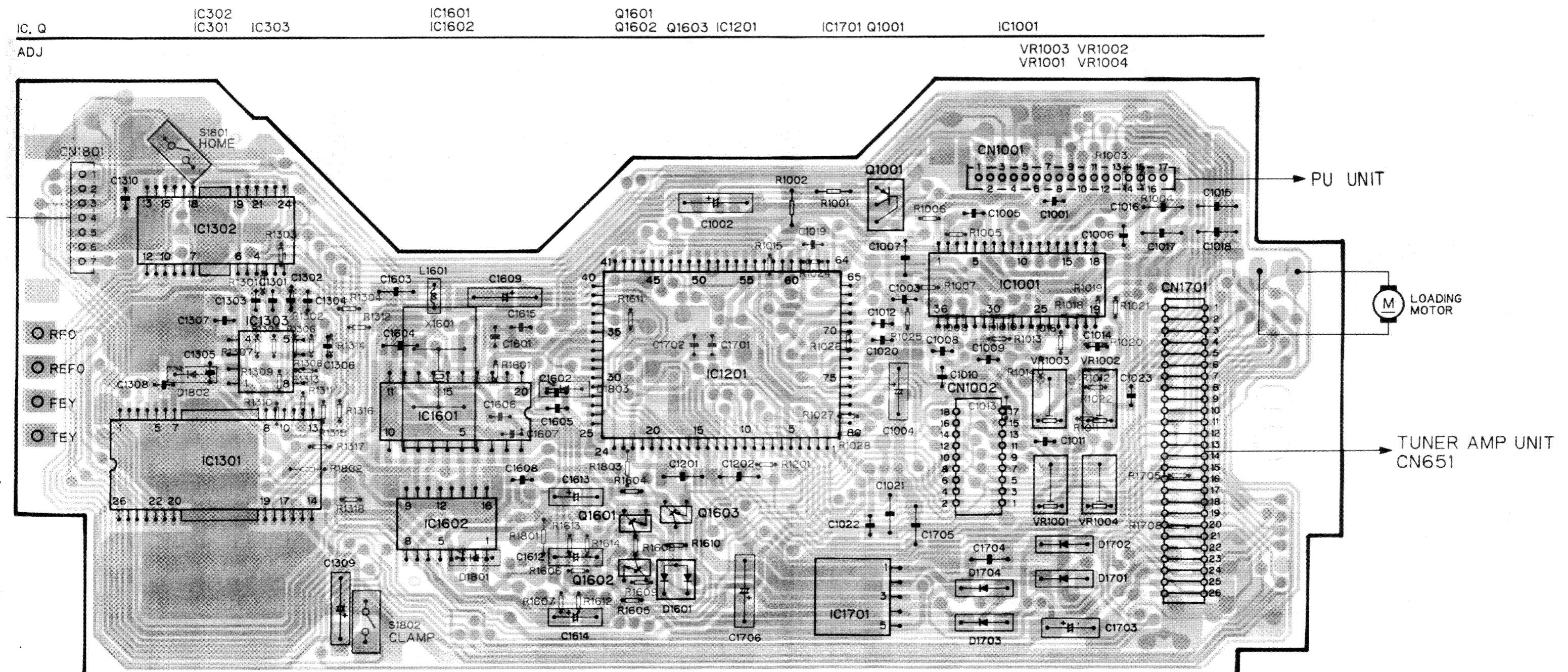
CONTROL UNIT

IC, Q	IC302	IC301	IC303	IC1601	IC1602	Q1601	Q1602	Q1603	IC1201	IC1701	Q1001
-------	-------	-------	-------	--------	--------	-------	-------	-------	--------	--------	-------

ADJ



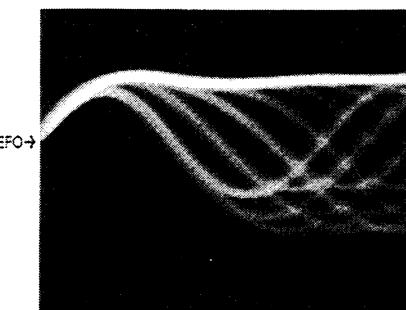
CONTROL UNIT



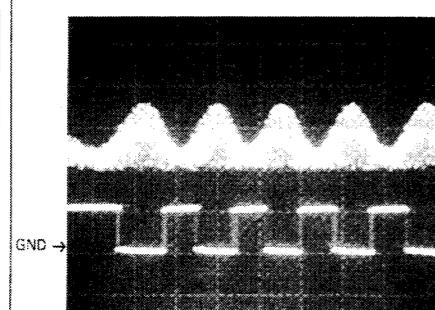
● Waveforms

Note: 1. The encircled numbers denote measuring pointes in the circuit diagram.
 2. Reference voltage
 REFO: 2.5V

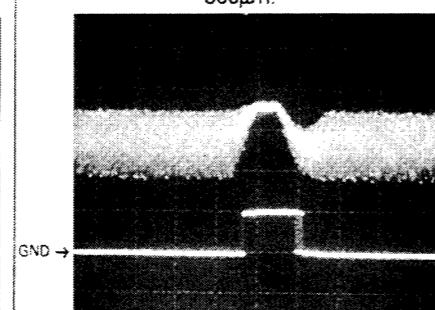
① RFO 0.5V/div. 0.2μs/div.
 Normal mode: play



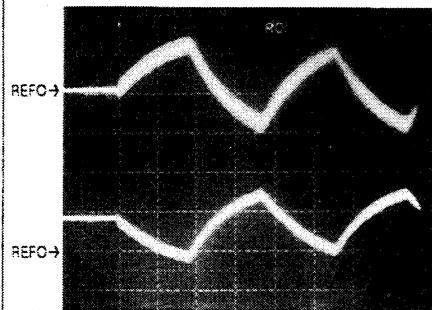
① CH1: RFO 1V/div. 0.5ms/div.
 ② CH2: MIRR 5V/div. Test mode: Tracking open



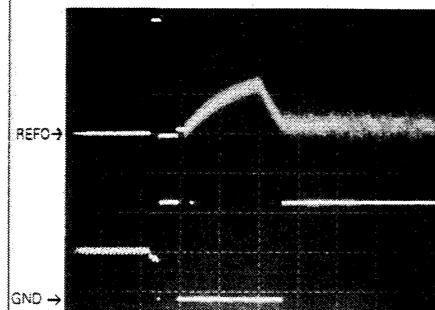
① CH1: RFO 1V/div. 0.5ms/div.
 ② CH2: MIRR 5V/div. Normal mode: The defect part passes 800μm.



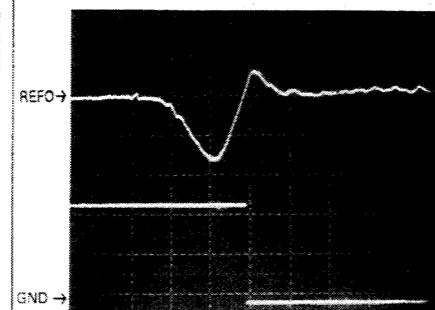
③ CH1: FIN 0.5V/div. 0.2s/div.
 ④ CH2: FO+ 2V/div. Test mode: No disc, Focus close



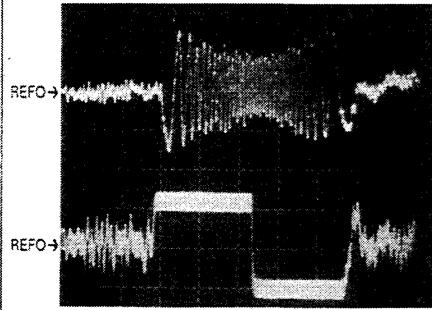
③ CH1: FIN 0.5V/div. 0.2s/div.
 ⑤ CH2: FOK 2V/div. Normal mode: Focus close



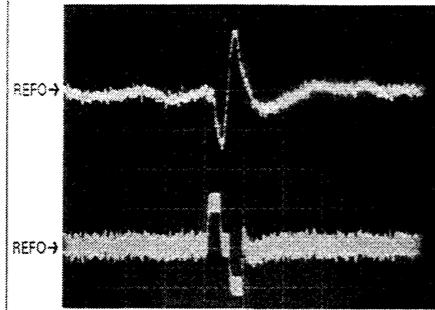
⑥ CH1: FEY 0.5V/div. 1ms/div.
 ⑦ CH2: XSO 2V/div. Normal mode: Focus close



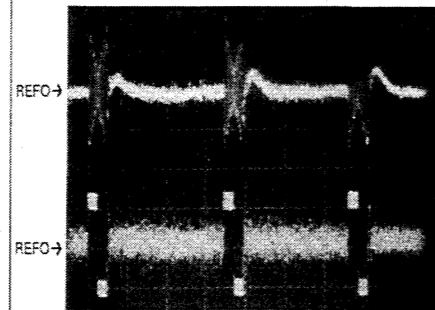
⑧ CH1: TEY 0.5V/div. 0.5ms/div.
 ⑨ CH2: TIN 0.5V/div. Test mode: 32 track jump (FWD)



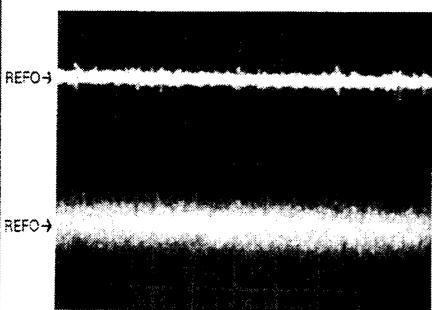
⑧ CH1: TEY 0.5V/div. 0.5ms/div.
 ⑨ CH2: TIN 0.5V/div. Test mode: Single jump (FWD)



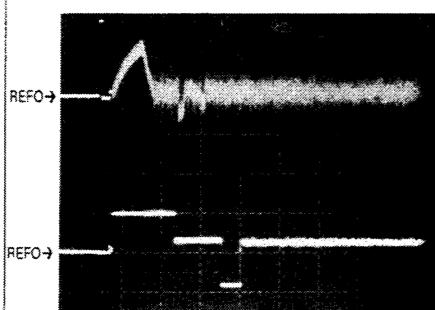
⑧ CH1: TEY 0.5V/div. 5ms/div.
 ⑨ CH2: TIN 0.5V/div. Test mode: 100 track jump (FWD)



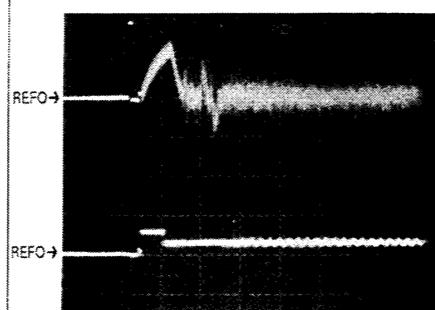
⑩ CH1: FAY 0.2V/div. 20ms/div.
 ⑪ CH2: FIN 0.5V/div. Normal mode: Play



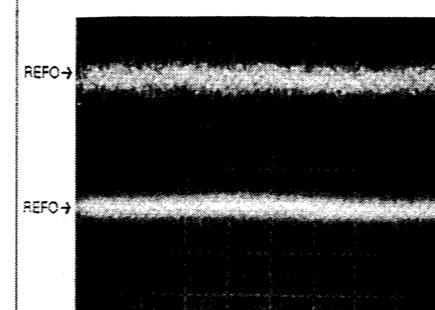
⑫ CH1: FIN 0.5V/div. 0.5s/div.
 ⑬ CH2: SIN 1V/div. Normal mode: Focus close (12cm)



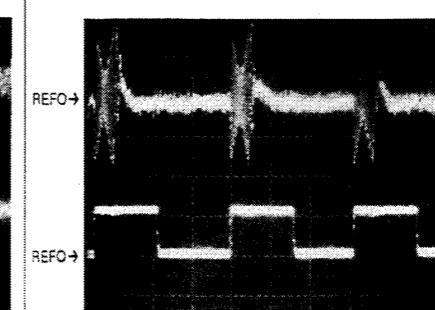
⑭ CH1: FIN 0.5V/div. 0.5s/div.
 ⑮ CH2: SIN 1V/div. Normal mode: Focus close (8cm)



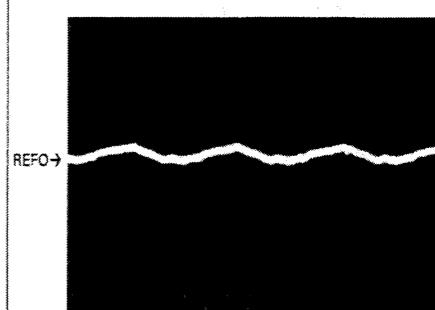
⑯ CH1: TEY 0.5V/div. 20ms/div.
 ⑰ CH2: TIN 0.5V/div. Normal mode: Play



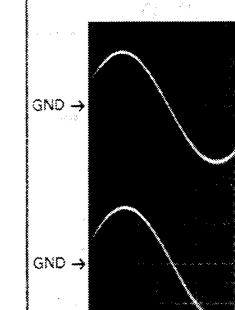
⑯ CH1: TEY 0.5V/div. 5ms/div.
 ⑰ CH2: CIN 0.5V/div. Test mode: 100 track jump (FWD)



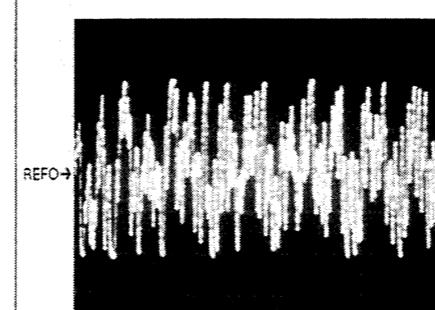
⑯ SiN 0.5V/div. 50ms/div.
 Normal mode: 1Play (12cm disc)



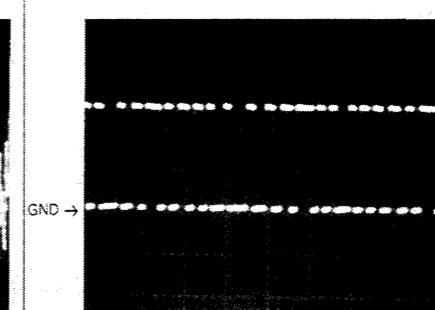
⑯ CH1: R OUT 1V/div.
 ⑰ CH2: L OUT 1V/div. Normal mode: Play



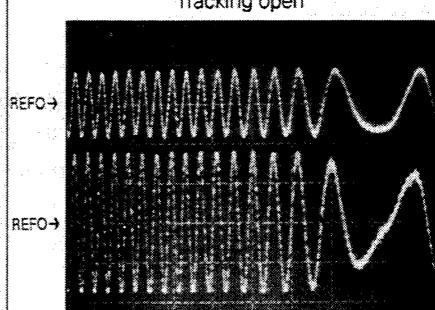
⑯ SiN 0.5V/div. 10ms/div.
 Search (12cm disc)



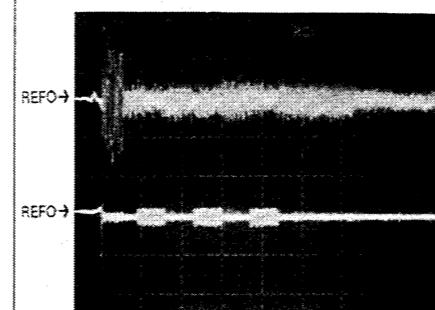
⑯ EFM 2V/div. 5μs/div.
 Play



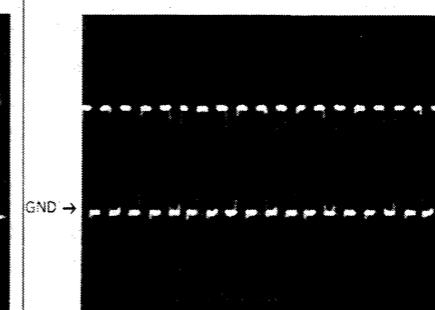
⑯ CH1: TEY 1V/div. 2ms/div.
 ⑰ CH2: TEC 1V/div. Test mode: Focus closed Tracking open



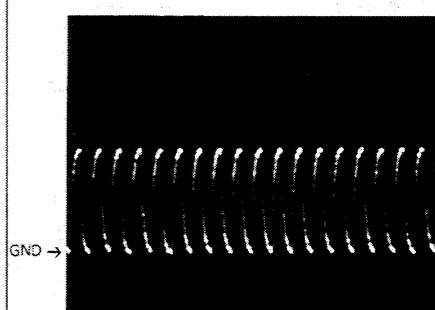
⑯ CH1: TEY 0.5V/div. 0.1s/div.
 ⑰ CH2: FEY 0.5V/div. Normal mode: AGC after focus close



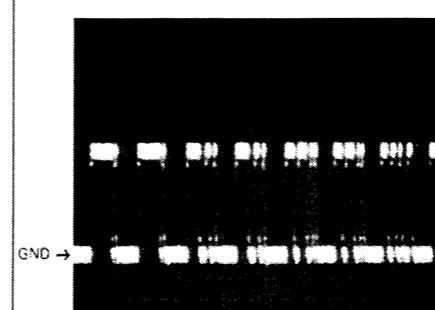
⑯ PLCK 2V/div. 0.5μs/div.
 Play



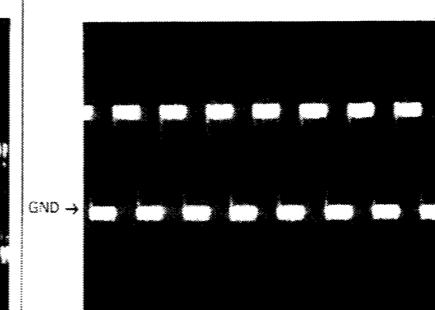
⑯ SCKO 2V/div. 1μs/div.
 Play



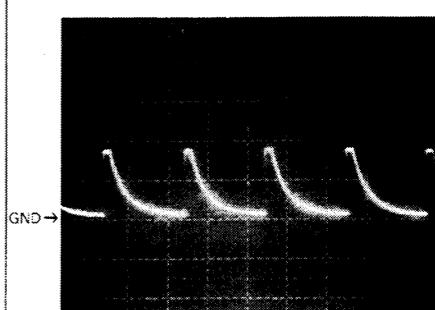
⑯ Dout 2V/div. 10μs/div.
 Play

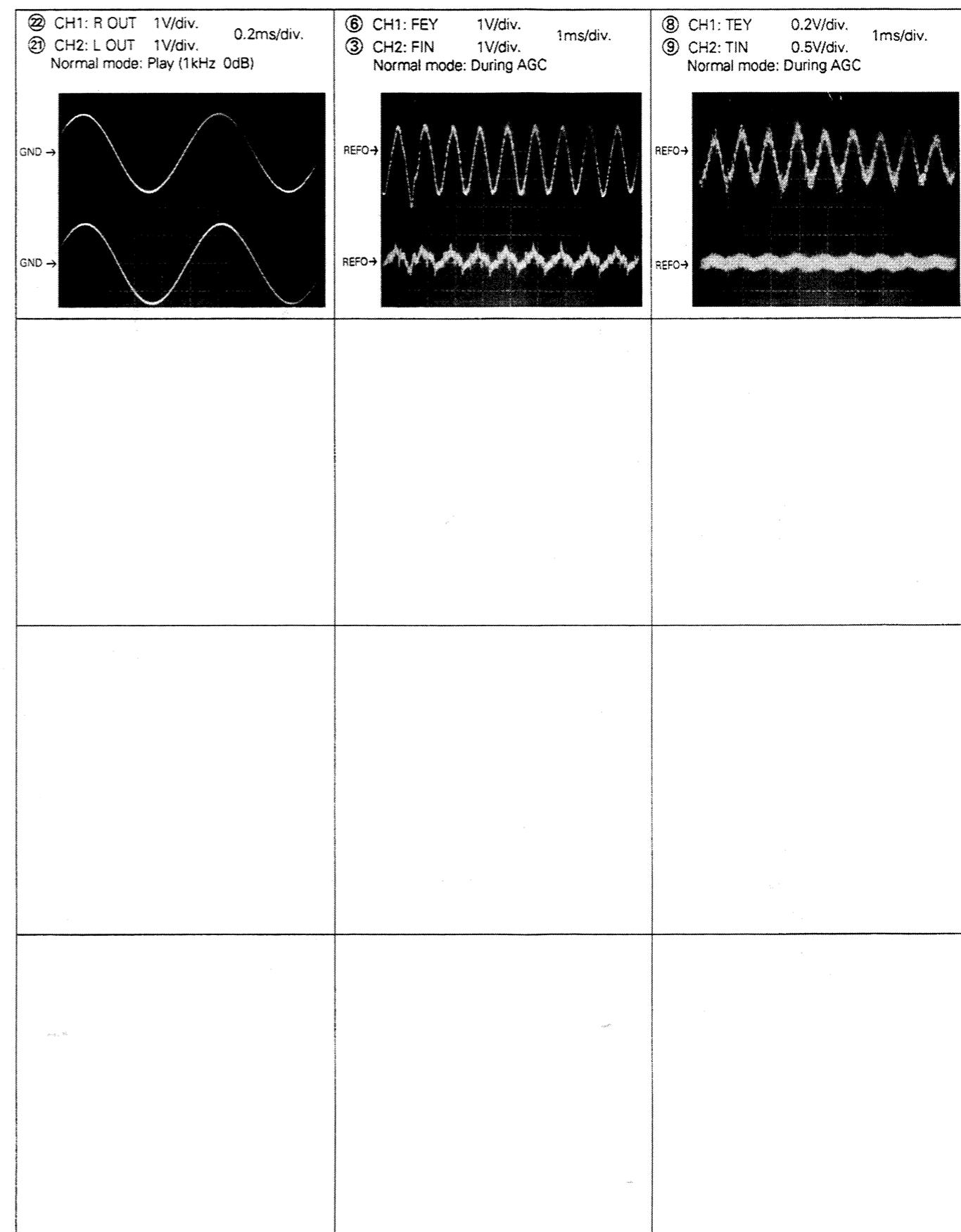
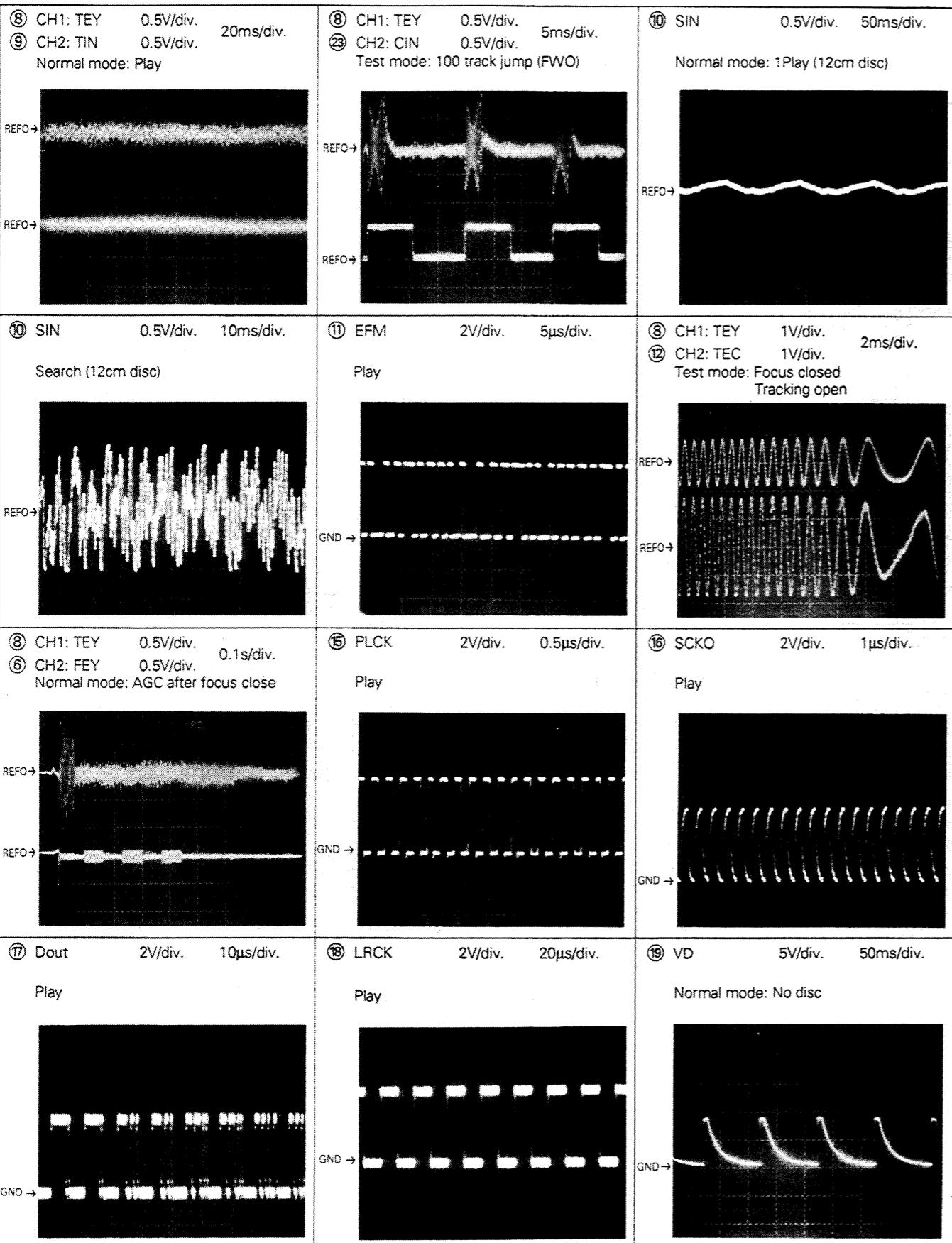


⑯ LRCK 2V/div. 20μs/div.
 Play



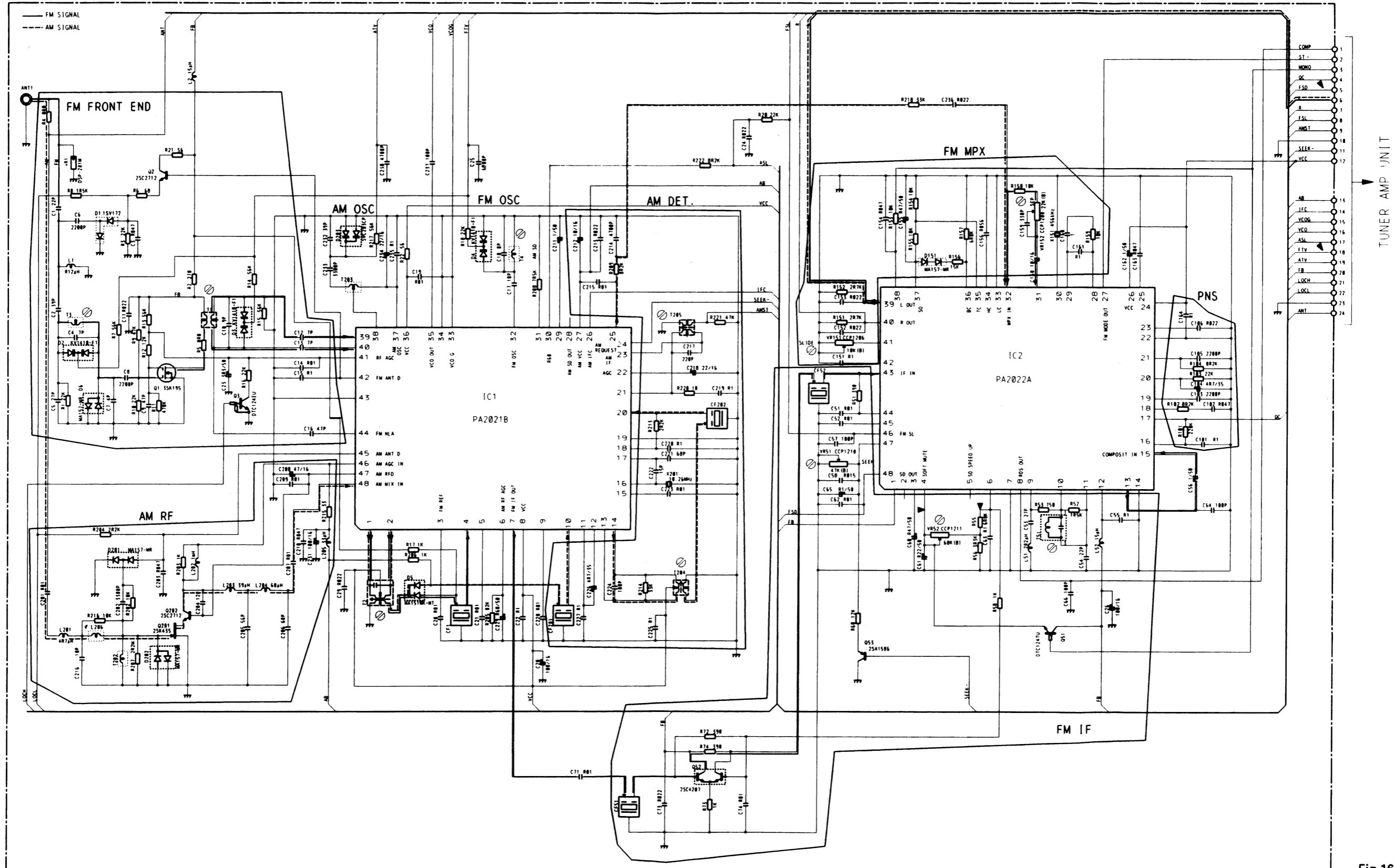
⑯ VD 5V/div. 50ms/div.
 Normal mode: No disc





4.5 FM/AM TUNER UNIT

● Circuit Diagram



● Connection Diagram

A

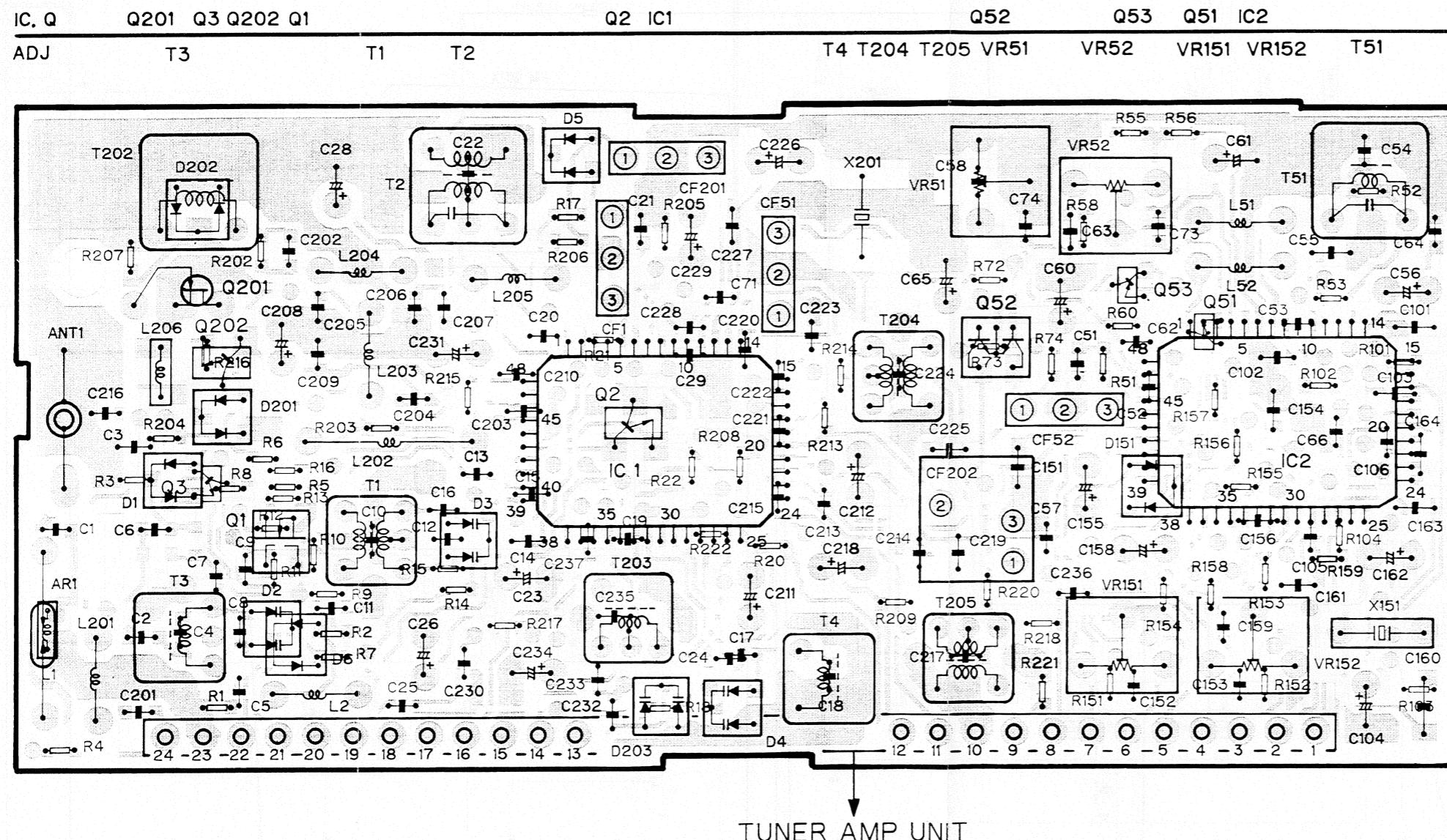


Fig.17

TUNER AMP UNIT

B

C

D

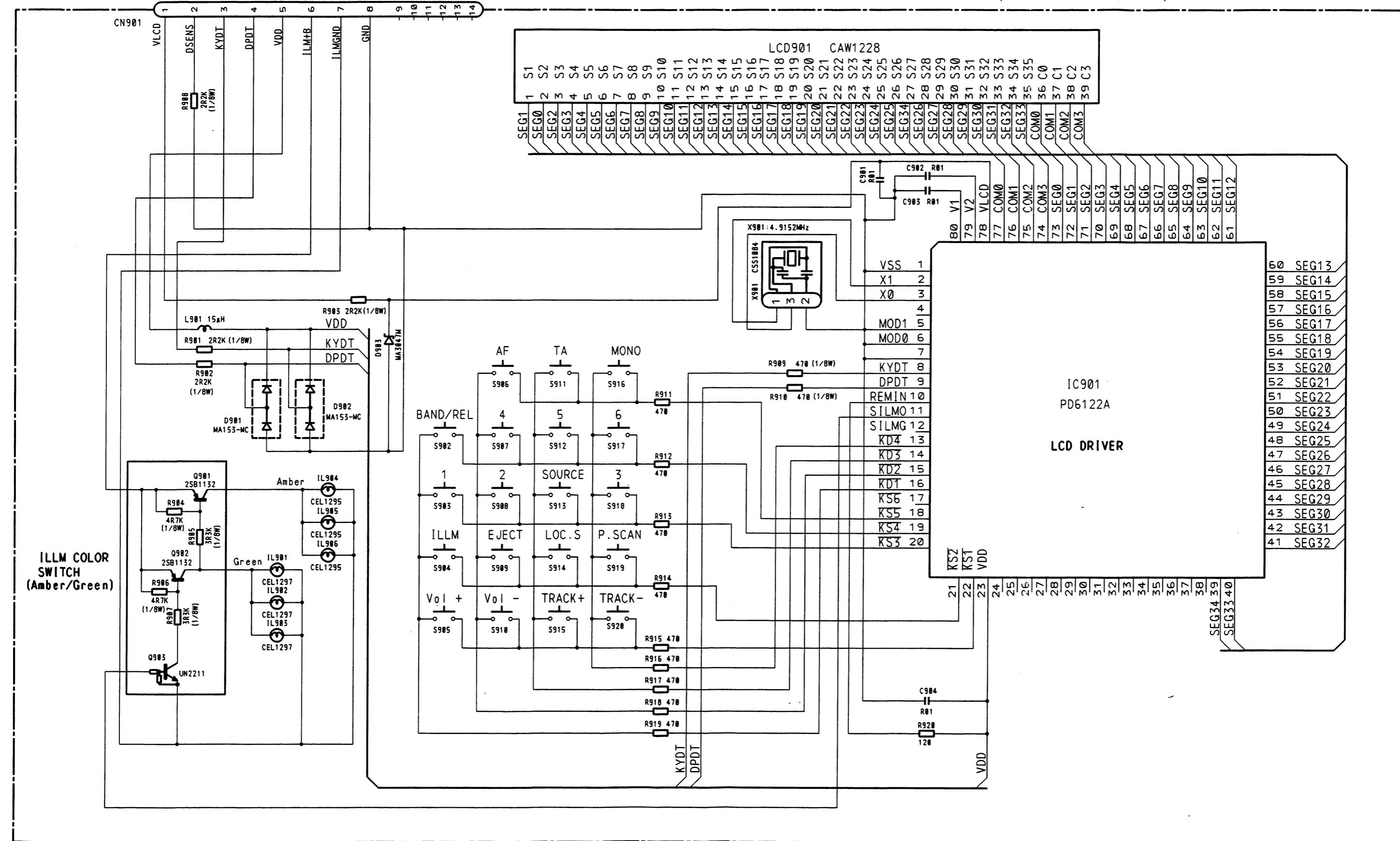


4.6 KEY BOARD UNIT(DEH-605RDS)

● Circuit Diagram

TO TUNER AMP. UNIT CN601

KEY BOARD UNIT (CWX1661)



● Connection Diagram

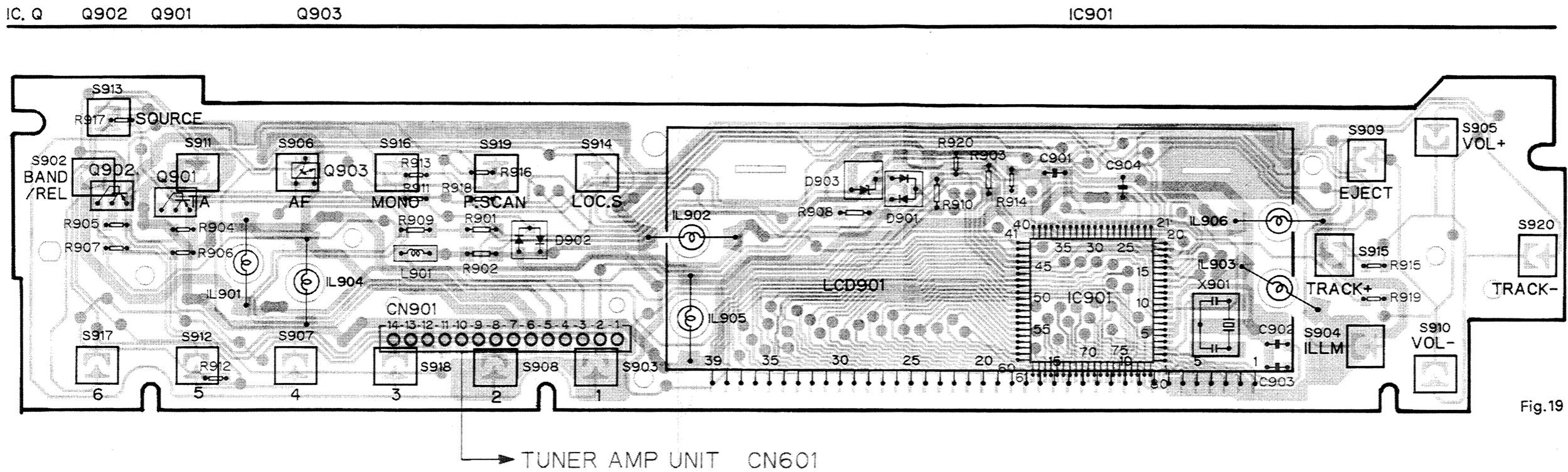


Fig.19

4.7 KEY BOARD UNIT(DEH-505SDK,505,405SDK,405)

● Connection Diagram

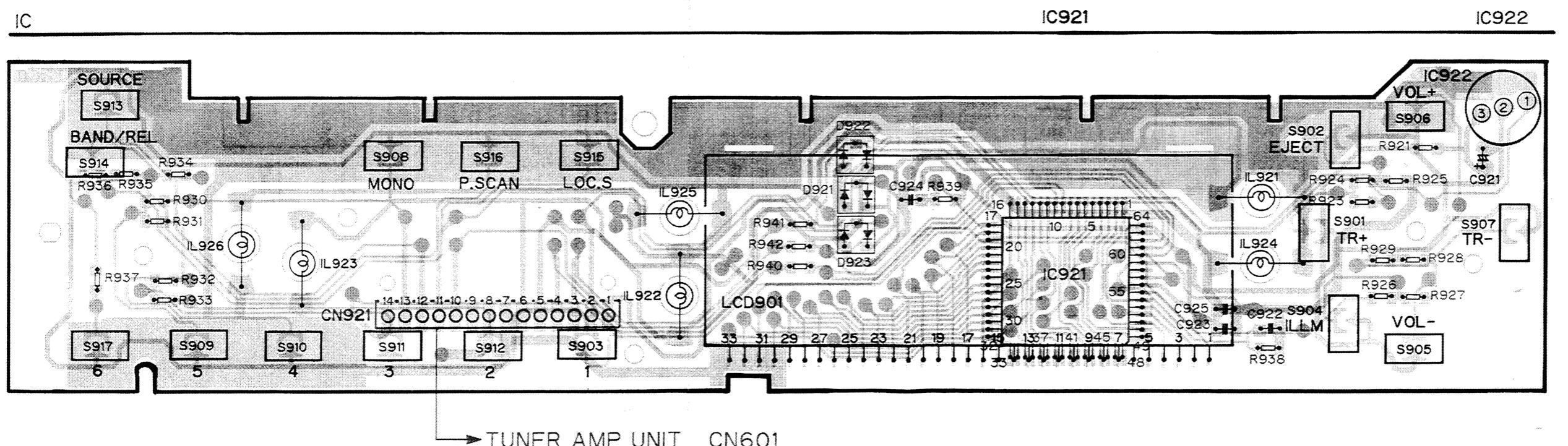


Fig.20

● Circuit Diagram

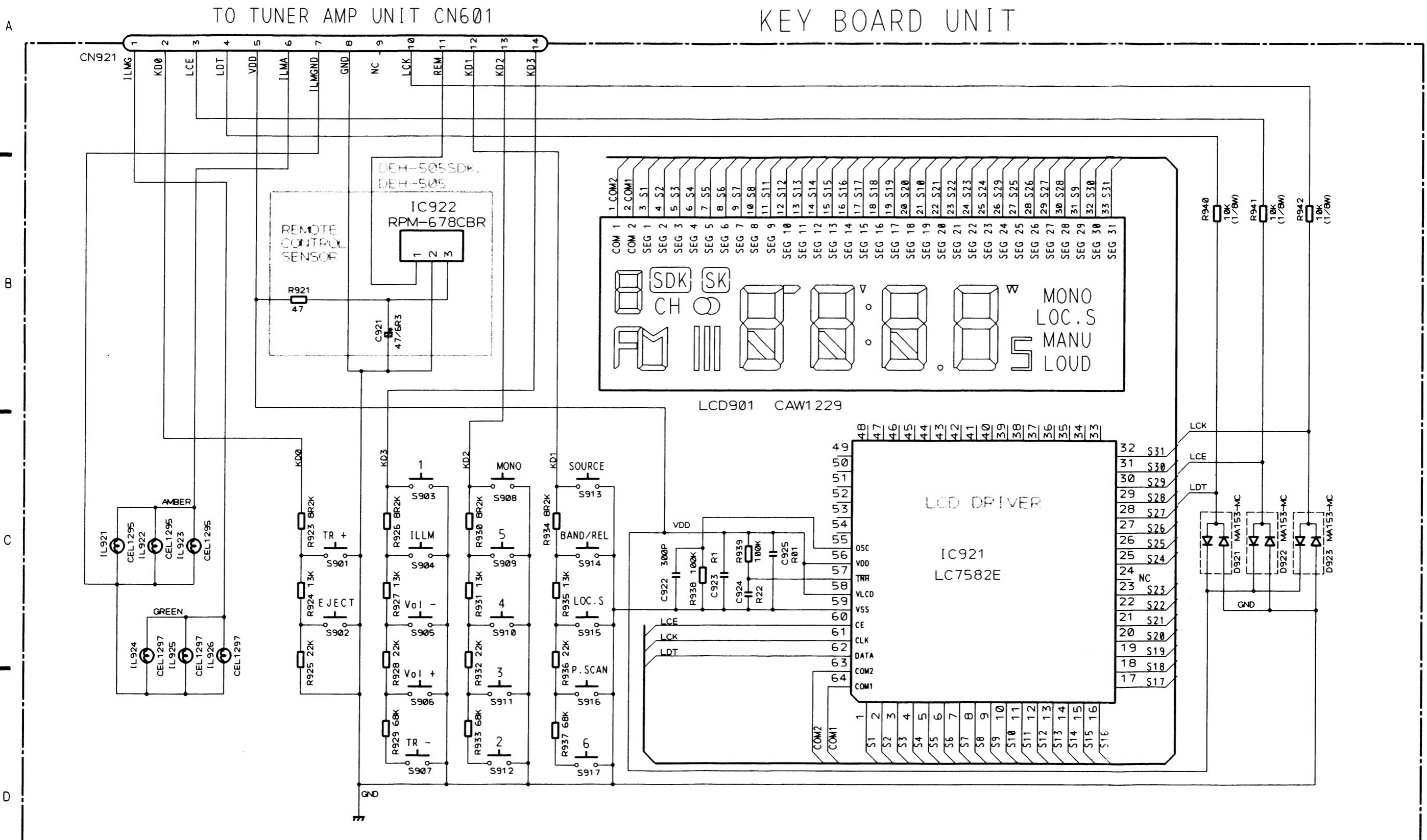


Fig.21